



Class LC 5553

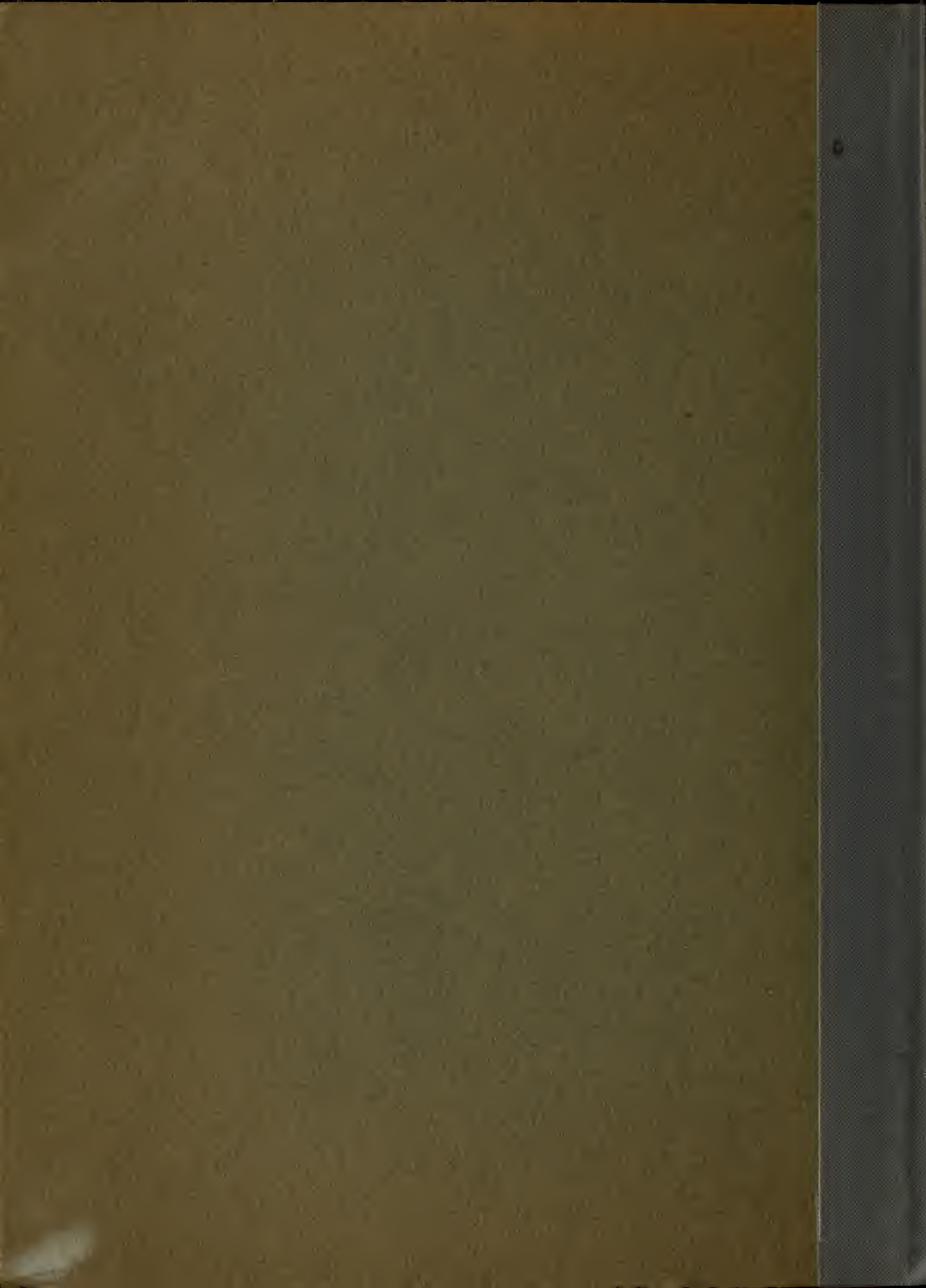
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1919

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COURSES
IN THE
Detroit Evening
High Schools



Published by the Authority of the
BOARD OF EDUCATION
CITY OF DETROIT
1919



Detroit, Public schools.

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Detroit Evening
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EVENING SCHOOL CALENDAR

1919-20

Fall Term

September 3, 4, 5, 1919—Advance enrollment.
September 8, 1919—Fall term begins.
November 27, 1919—Thanksgiving day recess.
December 11, 1919—Fall term closes.

Winter Term

January 5, 1920—Winter term begins.
March 26, 1920—Winter term closes.

Spring Term

April 5, 1920—Spring term begins.
June 24, 1920—Spring term closes.

Summer Term

June 28, 1920—Summer term begins.
August 19, 1920—Summer term closes.



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THE PURPOSE OF THE EVENING SCHOOLS

The Detroit Evening High Schools are organized for the purposes of giving instruction to wage-earning people to give them an opportunity to obtain practical information required for business and industrial life, and thus increase their earning power. They are organized also to give the foreigner who desires to become a citizen an opportunity first to learn English and adapt himself to his new community and then to take Americanization work to give him a working knowledge of democracy and so assist him towards citizenship. They are also planned to give academic instruction to such people as desire to continue their schooling, but are unable to do so in the daytime because of economic conditions. The evening schools afford an opportunity for everyone to make up deficiencies and to increase their knowledge and skill.

GENERAL INFORMATION

Four Terms

The sessions of the evening high schools are divided into four terms.

The Fall Term begins Monday, September 8th, 1919, and closes December 11, 1919.

The Winter Term begins Monday, January 5, 1920, and closes Thursday, March 26, 1920.

The Spring Term opens April 5, 1920, and closes June 24, 1920.

The Summer Term opens June 28, 1920, at Cass Technical High School only, and closes August 19, 1920.

Classes

All classes meet two evenings a week—either Monday and Wednesday, Tuesday and Thursday, or Friday and Saturday, and are in session from 7:00 to 9:00 o'clock. The sessions in the shop, drawing, and laboratory courses are from 7:00 to 10:00 o'clock.

Enrollments

Enrollments are made on Wednesday, Thursday and Friday of the week previous to the opening of school and the first week of each term. Students will not be admitted into classes after the first week in each term.

Requirements

The student must satisfy the principal or teacher in charge of the class room, as to his fitness to pursue the study which he elects.

For admission to mechanical and architectural drawing, shop, and laboratory courses, students must have a good working knowledge of mathematics through common and decimal fractions.

For admission to commercial studies, students must have completed the eighth grade.

Students under 16 years of age will not be admitted unless they have been granted working permits.

No student will be allowed to take more than two studies in any one term.

Credits

Students will be given credits which will be accepted by high schools and colleges on satisfactory completion of work.

Tuition

Students living outside the city limits will pay a tuition of \$10.00 per term for four evenings per week, or \$5.00 per term for two evenings per week in addition to regular deposit.

Deposits

All of the deposit is returnable to the student at the end of any term, provided he has attendance of 75 per cent and provided he returns in good condition all books, tools, instruments, etc., entrusted to him.

Such reasons as "sickness," "leaving the city," "change of hours of work," etc., will not entitle a student to a return of deposit, or any part of it.

SCHEDULE OF CLASSES

1919-1920

CASS TECHNICAL EVENING HIGH SCHOOL

Grand River and Second Ave.

Registration Deposit \$5.00, Returnable on 75% Attendance for the Term Registered

Technical Department	Hour	Mon. Room	Tues. Room	Wed. Room	Thurs. Room	Fri. Room	Sat. Room
Machinist's Course.							
Machine Shop.....	5:00- 7:30	101-1a	101-2a	101-1a	101-1a	101-2a	101-3a
Shop Mathematics.....	7:30- 10:30	101-1	101-2	101-3	101-1	101-2	101-3
	7-9	206-1	206-2	206-3	206-4	206-5	.....
Mechanical Drawing Course.							
Mechanical Drawing (Beg.).....	7-10	300-1	300-2	300-3	300-1	300-2	300-3
Mechanical Drawing (Adv.).....	7-10	309-1	309-2	309-3	309-1	309-2	309-3
Mathematics for Mech. Draw.	7-9	204-1	204-2	204-3	204-4	204-5	.....
Electrical Course.							
Electricity—Laboratory.....	7-10	100-1	100-2	100-3	100-4	100-5	.....
Electricity—Recitation.....	7-9	200-3	200-4	200-5	200-1	200-2	.....
Mathematics for Elect. Workers.	7-9	203-2	203-3	203-4	203-5	203-1	.....
Chemistry Course.							
Chemistry (Beginners).....	7-10	108-1	108-2	108-1	108-2	108-1	108-2
Qualitative Analysis.....	7-10	.....	109-1	.....	109-1	.....	109-1
Quantitative Analysis.....	7-10	109-2	.....	109-2	.....	102-2	.....
Chemistry for Nurses.....	7-9	215-1	215-2	215-1	215-2	.....	.....
Pharmacy Course.....	7-10	214-1	214-2	214-3	214-1	214-2	214-3
Pattern Making Course.....	7-9	105-2	207-1	105-2	207-1	.....	.....
Special Classes.							
Architectural Drawing.....	7-10	308-1	.....	308-1	.....	.....	.....
Tracing.....	7-10	.....	308-1	.....	308-2	.....	.....
Printing.....	7-9	110-1	.....	110-1	.....	.....	.....
Wireless Telegraphy.....	7-10	210	.....	210	.....	.....	.....

Registration Deposit \$1.00, Returnable on 75% Attendance for the Term Registered

Elementary Department	Hour	Mon. Room	Tues. Room	Wed. Room	Thurs. Room	Fri. Room	Sat. Room
Seventh and Eighth Grades.....	7-9	310	310	310	310	...	...
English for Foreigners.....	7-9	311	311	311	311	...	...
	7-9	312	312	312	312	...	...
	7-9	314	314	314	314	...	...
Americanization.....	7-9	303	303	303	303	...	...
	7-9	301	301	301	301	...	...
	7-9	302	302	302	302	...	...
	7-9	317	317	317	317	...	...
Public Speaking.....	7-9	316	...	316	...	...	...
Gym. and Swimming (Women)...	7-9	...	Swim	...	Gym.	...	...
Gym. and Swimming (Men)....	7-10	Gym.	...	Gym.	...	...	...

WILKINS HIGH SCHOOL OF COMMERCE EVENING SCHOOL
Porter Street near Second and Michigan Avenue

Subject	Deposit	Hour	Mon. Room	Tues. Room	Wed. Room	Thurs. Room
Applied English.....	\$1.00	7-9	...	103	...	103
English.....	1.00	7-9	...	104	...	104
Arithmetic I.....	1.00	7-9	...	102	...	102
Arithmetic II.....	1.00	7-9	102	...	102	...
Bookkeeping I.....	1.00	7-9	202	...	202	...
Bookkeeping II.....	1.00	7-9	...	203	...	203
Cost Accounting.....	1.00	7-9	203	...	203	...
Commercial Law.....	1.00	7-9	107	...	107	...
Salesmanship.....	1.00	7-9	103	...	103	...
Shorthand (Beginning).....	1.00	7-9	100	...	100	...
Shorthand (Beginning).....	1.00	7-9	101	...	101	...
Shorthand (Dictation).....	1.00	7-9	...	101	...	101
Shorthand (Advanced).....	1.00	7-9	...	100	...	100
Typewriting.....	1.00	7-9	200	200	200	200
Typewriting.....	1.00	7-9	302	302	302	302
Calculating and Adding Machines....	1.00	7-9	201	201	201	201
Pennmanship and Letterwriting.....	1.00	7-9	...	301	...	301

CENTRAL EVENING HIGH SCHOOL

Cass and Warren Aves.

Subject	De-posit	Mon. Room	Tues. Room	Wed. Room	Thurs. Room	Fri. Room	Sat. Room
Technical							
Machine Shop and Shop	\$5.00	55	55	55	55	55	55
Mathematics	1.00	104	104	104	104	104	104
Mechanical Drawing I	1.00	158	158	158	158	158	158
Mechanical Drawing II	1.00	158	158	158	158	158	158
Architectural Drawing	1.00	158	158	158	158	158	158
Free Hand Drawing	1.00	152	152	152	152	152	152
Science							
Physics I and II	2.00	17	17	17	17	17	17
Chemistry I and II	2.00	9	9	9	9	9	9
Commercial							
Shorthand I	1.00	120	120	120	120	120	120
Shorthand II	1.00	120	120	120	120	120	120
Shorthand III	1.00	157	157	157	157	157	157
Shorthand IV	1.00	157	157	157	157	157	157
Typewriting I	1.00	118	118	118	118(2)	118(2)	118(2)
Typewriting II	1.00	118	118	118	118	118	118
Arithmetic I and II	1.00	155	155	155	155	155	155
Bookkeeping I	1.00	153	153	153	153	153	153
Bookkeeping II	1.00	153	153	153	153	153	153
Commercial Law and Commercial Geography	1.00	105	105	105	105	105	105
Penmanship and Business English	1.00	165	165	165	165	165	165
Salesmanship	1.00	166	166	166	166	166	166
History							
American History	1.00	111	111	111	111	111	111
Mathematics							
Algebra I and II	1.00	114	114	114	114	114	114
Geometry I and II	1.00	110	110	110	110	110	110
Algebra III	1.00	110	110	110	110	110	110
Trigonometry	1.00	110	110	110	110	110	110
Languages							
English I	1.00	130	130	130	130	130	130
English II	1.00	130	130	130	130	130	130
English III	1.00	123	123	123	123	123	123
English IV	1.00	123	123	123	123	123	123
English V	1.00	124	124	124	124	124	124
English VI	1.00	123	123	123	123	123	123
English VII and VIII	1.00	124	124	124	124	124	124
Literature	1.00	129	129	129	129	129	129
Latin	1.00	133	133	133	133	133	133
French I	1.00	112	112	112	112	112	112
French II	1.00	19	19	19	19	19	19
French III	1.00	19	19	19	19	19	19
Spanish I	1.00	108	108	108	108	108	108
Spanish II	1.00	108	108	108	108	108	108
Spanish III	1.00	108	108	108	108	108	108
Domestic Science and Art							
Millinery	1.00	58 (1)	58 (2)	58 (1)	58 (2)	58 (1)	58 (2)
Sewing	\$1.00	52 (1)	52 (2)	52 (1)	52 (2)	52 (1)	52 (2)
Cooking	1.00	66	66	66	66	66	66
Music							
Piano	1.00	300	300	300	300	300	300
Orchestra	1.00	111	111	111	111	111	111
Chorus and Sight Reading	1.00	111	111	111	111	111	111
7th and 8th Grades	1.00	134	134	134	134	134	134
5th and 6th Grades	1.00	131	131	131	131	131	131
Americanization	1.00	203	203	203	203	203	203
Physical Training							
Gymnasium (Men)	1.00	255	255	255	255	255	255
Gymnasium (Women)	1.00	256	256	256	256	256	256
Swimming (Women)	1.00	256	256	256	256	256	256

EASTERN EVENING HIGH SCHOOL
Boulevard and Mack

Subject,	Deposit	Mon. Room	Tues. Room	Wed. Room	Thurs. Room	Fri. and Sat Room
Technical Dept.						
Mechanical Drawing II.....	\$1.00	D150	...	M221	...	...
Mechanical Drawing II.....	...	...	D150	...	M221	...
Mechanical Drawing I.....	1.00	M221	...	D150	...	...
Mechanical Drawing I.....	1.00	...	M221	...	D150	...
D = Drawing. M = Mathematics.)						
Gasoline Engines.....	1.00	123	...	123	...	...
Sewing.....	1.00	231	...	231	...	...
Sewing.....	1.00	...	231	...	231	...
Sewing.....	1.00	233	...	233	...	...
Tailoring.....	1.00	232	...	232	...	...
Architectural Drawing.....	1.00	...	140	...	140	...
Commercial Dept.						
Bookkeeping.....	1.00	322	...	322	...	...
Bookkeeping.....	1.00	...	322	...	322	...
Business English.....	1.00	...	225	...	224	...
Business Arithmetic.....	1.00	225	...	225	...	...
Shorthand (Beginners).....	1.00	325	...	325	...	...
Shorthand (Advanced).....	1.00	...	325	...	325	...
Shorthand (Dictation).....	1.00	...	223	...	223	...
Typewriting.....	1.00	400	...	400	...	...
Typewriting.....	1.00	...	400	...	400	...
Typewriting.....	1.00	...	...	...	...	400
Academic Dept.						
French II.....	1.00	321	...	321	...	...
French II.....	1.00	226	...	226	...	...
French I.....	1.00	323	...	323	...	...
French I.....	1.00	...	323	...	323	...
Spanish.....	1.00	321	...	321	...	...
English I.....	1.00	223	...	223	...	...
Algebra.....	1.00	...	223	...	223	...
Music						
Chorus.....	1.00	Aud.	...	Aud.	...	...
Orchestra.....	1.00	...	Aud.	...	Aud.	...
Physical Training (Men).....	1.00	Gym.	...	Gym.	...	...
Physical Training (Women).....	1.00	...	Gym.	...	Gym.	...
Elementary Dept. and Americanization	1.00	200	200	200	200	...

NORDSTRUM EVENING HIGH SCHOOL
West Fort Street near Beard

Subject	Deposit	Mon. Room	Tues. Room	Wed. Room	Thurs. Room
Language					
English.....	\$1.00	207	...	207	...
French.....	1.00	...	207	...	207
Physical Training					
Physical Culture (Women).....	1.00	Gym.	...	Gym.	...
Physical Culture (Men).....	1.00	...	Gym.	...	Gym.
Mathematics					
Arithmetic.....	1.00	205	...	205	...
Algebra.....	1.00	...	205	...	205
Geometry.....	1.00	205	...	205	...
Trigonometry.....	1.00	...	205	...	205
Elementary Dept.					
First to Fourth Grades.....	....	209	209	209	...
Fifth to Sixth Grades.....	....	209	209	209	...
Seventh and Eighth Grades.....	1.00	206	206	206	206
Americanization.....	....	208	208	208	...
Business Dept.					
Business English.....	1.00	203	...	203	...
(Penmanship; Letter Writing, Spelling)					
Bookkeeping.....	1.00	...	203	...	203
Shorthand (Beginning).....	1.00	201	...	201	...
Shorthand (Advanced).....	1.00	...	201	...	201
Typewriting I.....	1.00	...	105	...	105
Typewriting II.....	1.00	105	...	105	...
Industrial Dept.					
Mechanical Drawing.....	1.00	103	...	103	...
Architectural Drawing.....	1.00	...	103	...	103
Pattern Making and Cabinet Making.....	1.00	...	102	...	102
Household Arts Dept.					
Cooking.....	1.00	...	104	...	104
Sewing.....	1.00	304	...	304	...
Millinery.....	1.00	...	304	...	304
Music					
Orchestra.....	1.00	308	...	308	...
Chorus.....	1.00	...	308	...	308
Red Cross.....	No fee	303	...	...	...

NORTHEASTERN EVENING HIGH SCHOOL
Hancock, Grandy and Warren Avenues

Subject	Deposit	Mon. Room	Tues. Room	Wed. Room	Thurs. Room
Algebra (Advanced)	\$1.00	206	...	206	...
Algebra (Beginning)	1.00	...	206	...	206
Arithmetic (Beginning)	1.00	208	...	208	...
Arithmetic (Advanced)	1.00	...	208	...	208
Bookkeeping (Beginning)	1.00	205	...	205	...
Bookkeeping (Advanced)	1.00	...	205	...	205
Commercial Law	1.00	211	...	211	...
Cooking (Advanced)	1.00	8	...	8	...
Cooking (Beginning)	1.00	...	8	...	8
English I	1.00	...	207	...	207
English II	1.00	209	...	209	...
Mechanical Drawing (Beginning)	1.00	202	...	202	...
Mechanical Drawing (Advanced)	1.00	...	202	...	202
Mechanical Drawing (Advanced)	1.00	1	...	1	...
Mechanical Drawing (Beginning)	1.00	...	1	...	1
Sewing (Beginning)	1.00	4	...	4	...
Sewing (Beginning)	1.00	...	6	...	6
Sewing (Advanced)	1.00	6	...	6	...
Sewing (Advanced)	1.00	...	4	...	4
Shorthand (Beginning)	1.00	...	215	...	215
Shorthand (Advanced)	1.00	215	...	215	...
Shop (Woodworking)	1.00	7	...	7	...
Typewriting (Beginning)	1.00	217	...	217	...
Typewriting (Advanced)	1.00	...	217	...	217
Seventh and Eighth Grades	1.00	210	210	210	210
Fifth and Sixth Grades .....	...	108	108	108	108
Seventh and Eighth Grades	1.00	212	212	212	212
Fifth and Sixth Grades .....	...	103	103	103	103
Elementary English (For those wishing to learn to speak English) .....	...	114	114	114	114
Orchestra	1.00	Aud.	...	...	Aud.
Citizenship Class .....	...	...	202	202	...
Gymnasium (Men)	1.00	Gym.	...	Gym.	...
Gymnasium (Women)	1.00	...	Gym.	...	Gym.
Swimming	1.00	...	...	...	...

NORTHERN EVENING HIGH SCHOOL
Woodward and Josephine

Subject	Deposit	Mon. Room	Tues. Room	Wed. Room	Thurs. Room
English I.....	\$1.00	210	...	210	...
English II.....	1.00	...	210	...	210
English III.....	1.00	212	...	212	...
English IV.....	1.00	...	214	...	214
English VI.....	1.00	214	...	214	...
English VII.....	1.00	...	212	...	212
French I.....	1.00	205	...	205	...
French I.....	1.00	...	205	...	205
Spanish I.....	1.00	...	209	...	209
Spanish I.....	1.00	209	...	209	...
Arithmetic.....	1.00	...	206	...	206
Algebra (Beginners).....	1.00	206	...	206	...
Algebra (Advanced).....	1.00	...	201	...	201
Chemistry.....	1.00	101	...	101	...
Bookkeeping I.....	1.00	313	...	313	...
Bookkeeping I.....	1.00	...	313	...	313
Cost Accounting.....	1.00	303	...	303	...
Shorthand I.....	1.00	215	...	215	...
Shorthand II.....	1.00	...	215	...	215
Shorthand (Advanced).....	1.00	217	...	217	...
Typewriting.....	1.00	221	221	221	221
Commercial Law.....	1.00	213	...	213	...
Business English I.....	1.00	...	213	...	213
Business English II.....	1.00	219	...	219	...
Fifth Grade.....	....	312	312	312	312
Sixth Grade.....	....	306	306	306	306
Seventh Grade.....	1.00	310	310	310	310
Eighth Grade.....	1.00	314	314	314	314
Mechanical Drawing.....	1.00	319	319	319	319
Shop Mathematics.....	1.00	...	319	...	319
Cooking.....	1.00	119	...	119	...
Sewing.....	1.00	...	113	...	113
Physical Training (Men).....	1.00	Gym.	...	Gym.	...
Physical Training (Women).....	1.00	...	Gym.	...	Gym.
Swimming (Men).....	1.00	Gym	...	Gym.	...
Swimming (Women).....	1.00	..	Gym.	...	Gym.

NORTHWESTERN EVENING HIGH SCHOOL
Boulevard and Grand River Avenues

Subject	Deposit	Hour	Mon. Room	Tues. Room	Wed. Room	Thurs. Room
Business Dept.						
Bookkeeping (Beginning).....	\$1.00	7-9	202	...	202	...
Bookkeeping (Advanced).....	1.00	7-9	...	202	...	202
Shorthand (Dictation).....	1.00	7-9	216	...	216	...
Shorthand (Beginning) (Gregg).....	1.00	7-9	214	...	214	...
Shorthand (Beginning) (Gregg).....	1.00	7-9	...	212	...	212
Typewriting	1.00	7-9	204	...	204	...
Typewriting	1.00	7-9	...	204	...	204
Penmanship and Business English.....	1.00	7-9	210	...	210	...
Science						
Chemistry	1.00	7-10	1	...	1	...
Household Art Dept.						
Cooking	1.00	7-9	21	...	21	...
Sewing (Plain and Dressmaking).....	1.00	7-9	11	...	11	...
Sewing (Millinery).....	1.00	7-9	...	11	...	11
Industrial Dept.						
Mechanical Drawing (Beginning).....	1.00	7-9-10	Mc-Michael Bldg.	...	Mc-Michael Bldg.	...
Mechanical Drawing (Advanced).....	1.00	7-9-10	Mc-Michael Bldg.	...	Mc-Michael Bldg.	...
Architectural Drawing.....	1.00	7-9	Mc-Michael Bldg.	...	Mc-Michael Bldg.	...
Automobile Mechanics.....	1.00	7-9	Mc-Michael Bldg.	...	Mc-Michael Bldg.	...
Mathematics						
Commercial Algebra.....	1.00	7-9	217	...	217	...
Business Arithmetic.....	1.00	7-9	...	217	...	217
Languages						
French (Beginning).....	1.00	7-9	101	...	101	...
French (Beginning).....	1.00	7-9	...	101	...	101
Spanish (Beginning).....	1.00	7-9	121	...	121	...
Latin (Beginning).....	1.00	7-9	103	...	103	...
Music						
Chorus.....	1.00	7-9	...	210	...	210
Orchestra.....	1.00	7-9	210	...	210	...

SOUTHEASTERN EVENING HIGH SCHOOL
Fairview and Goethe

Subject	De-posit	Monday		Tuesday		Wednesday		Thursday	
		Room	Sec.	Room	Sec.	Room	Sec.	Room	Sec.
Business Dept.									
Bookkeeping (Beginning)	\$1.00	302	.	.....	.	302	.	....	.
Bookkeeping (Advanced)	1.00	...	.	302	.	....	.	302	.
Business English.....	1.00	...	.	207	.	....	.	207	.
Dictation.....	1.00	...	.	315	.	....	.	315	.
Shorthand (Beginning) (Gregg)..	1.00	313	.	....	.	313	.	....	.
Shorthand (Beginning) (Gregg)..	1.00	...	.	313	.	....	.	313	.
Typewriting.....	1.00	211	.	....	.	211	.	....	.
Typewriting.....	1.00	...	.	211	.	....	.	211	.
Penmanship and Letterwriting..	1.00	...	.	210	.	....	.	210	.
Elementary Dept.									
First-Third Grades.....	.....	202	.	....	.	202	.	....	.
Fifth and Sixth Grades.....	.....	208	1	208	2	208	1	208	2
Citizenship.....	.....	.....	.	202	.	....	.	202	.
Americanization									
Seventh and Eighth Grades.....	.....	206	1	206	2	206	1	206	2
English									
English Grammar and Comp.....	1.00	211	.	....	.	211	.	....	.
Public Speaking.....	1.00	....	.	211	.	....	.	211	.
English (High School).....	1.00	209	.	....	.	209	.	....	.
Household Arts Dept.									
Cooking.....	1.00	....	.	117	.	....	.	117	.
Sewing (Plain and Millinery)....	1.00	....	.	107	.	....	.	107	.
Sewing (Dressmaking).....	1.00	111	.	....	.	111	.	....	.
Industrial Dept.									
Architectural Drawing.....	1.00	102	.	....	.	102	.	....	.
Machine Shop and Shop Math...	5.00	110	.	....	.	110	.	....	.
Mechanical Drawing (Beginning)	1.00	....	.	102	.	....	.	102	.
(Trade Extension)									
Mechanical Drawing (Advanced)	1.00	102	.	....	.	102	.	....	.
(Trade Extension)									
Mechanical Drawing (Beginning)	1.00	114	.	....	.	114	.	....	.
(Trade Preparatory)									
Mechanical Drawing (Advanced)	1.00	....	.	114	.	....	.	114	.
(Trade Preparatory)									
Language									
French (Beginning).....	1.00	204	.	....	.	204	.	....	.
Spanish (Beginning).....	1.00	....	.	204	.	....	.	204	.
Mathematics									
Commercial Algebra.....	1.00	....	.	308	.	....	.	308	.
Business Arithmetic.....	1.00	308	.	....	.	308	.	....	.
Music									
Chorus.....	1.00	Aud.	.	....	.	Aud.	.	....	.
Orchestra.....	1.00	....	.	Aud.	.	....	.	Aud.	.
Physical Education									
Gymnasium Work (Men).....	\$1.00	....	.	Gym.	.	....	.	Gym.	.
Swimming (Men).....	1.00	....	.	Tank	.	....	.	Tank	.
Gymnasium Work (Women)....	1.00	Gym.	.	....	.	Gym.	.	....	.
Swimming (Women).....	1.00	Tank	.	....	.	Tank	.	....	.
Science									
Chemistry.....	1.00	....	.	103	.	....	.	103	.

WESTERN EVENING HIGH SCHOOL
 Scotten Avenue, Between Porter and Baker Streets
 High School Department

Subject	Deposit	Mon. Room	Tues. Room	Wed. Room	Thurs. Room
Language					
English I and II.....	\$1.00	102	...	102	...
French (Beginning).....	1.00	...	102	...	102
Spanish (Beginning).....	1.00	103	...	103	...
Science					
Chemistry.....	2.00	1	...	1	...
Physical Training					
Physical Training (Women).....	1.00	Gym.	...	Gym.	...
Physical Culture (Men).....	1.00	...	Gym.	...	Gym.
Mathematics					
Algebra (Beginning).....	1.00	118	...	118	...
Algebra (Advanced).....	1.00	...	118	...	118
Arithmetic.....	1.00	116	...	116	...
Elementary Dept.					
Fifth and Sixth Grades.....	....	206	206	206	206
Seventh and Eighth Grades.....	1.00	204	204	204	204
Americanization.....	....	119	119	119	119
Business Dept.					
Bookkeeping (Beginning).....	1.00	117	...	117	...
Bookkeeping (Advanced).....	1.00	...	117	...	117
Shorthand (Beginning).....	1.00	208	...	208	...
Dictation.....	1.00	...	202	...	202
Typewriting.....	1.00	Second Floor Corridor			
Penmanship, Spelling and Elementary English...	1.00	...	116	...	116
Industrial Dept.					
Mechanical Drawing (Beginning).....	1.00	...	24	...	24
Mechanical Drawing (Advanced).....	1.00	24	...	24	...
Architectural Drawing.....	1.00	24	...	24	...
Automobile Construction.....	1.00	...	20	...	20
Pattern and Cabinet Making.....	2.00	14	...	14	...
Household Arts Dept.					
Cooking.....	1.00	19	...	19	...
Sewing.....	1.00	17	...	17	...
Millinery.....	1.00	...	17	...	17
Music					
Orchestra.....	1.00	Auditorium	...	Auditorium	...
Chorus.....	1.00	...	Auditorium	...	Auditorium

BISHOP SCHOOL

English for foreigners, citizenship classes and regular graded elementary work will be offered at the Bishop School.

TECHNICAL GROUP

MECHANICAL DRAWING

Mechanical Drawing is the written language of all builders, whether they are machinists, bricklayers, carpenters, plumbers, engineers or architects.

It has been the experience of the teachers of mechanical and architectural drawing that evening school students lack the proper knowledge of mathematics to fully accomplish the course given in the following outline. A simple test in fractions and decimals is required of all applicants for the drawing courses. The classes in drawing are conducted as follows: Each division meets two evenings a week; for example, on Monday and Wednesday, or Tuesday and Thursday. One evening each week is spent in drawing from 7 p. m. to 10 p. m., and the alternate evening is given over to the study of the related mathematics and the discussion of drawing room problems from 7 p. m. to 9 p. m.

No real mechanical work can be done without the ability to read a mechanical drawing. Consequently, all who want to take shop work and do not have such knowledge should take the drawing first, or drawing and shop work on alternate nights.

The class work in drawing, as well as in all shop courses, is done largely on the individual plan. Each student advances as rapidly as he can, making use of all he knows, regardless of where he learned it, and is independent of the other members of the class. The following is a general statement of what the average student ought to accomplish in a given time. A course in any subject covers approximately one evening school term of twelve weeks. Classes meet two evenings a week, either Monday and Wednesday, or Tuesday and Thursday.

The courses in drafting have been arranged in short successive steps following a regular sequence. A knowledge of each step is necessary for advancement to the next.

These short steps have been grouped for convenience as follows:

COURSE (1)

Make working drawings from sketches of machine parts, including preparatory work to familiarize the student with tools and standards.

COURSE (2)

Read drawings, make sketches, detail drawings, tracings, and blue prints; calculate and order stock.

COURSE (3)

Make projections of machine parts and lay-outs of ordinary sheet metal work.

COURSE (4)

Make and read detail and assembly drawings, with bill of material for erecting.

COURSE (5)

Make a study of screw threads, cams, and gears; figure dimensions for spur and bevel gears.

COURSE (6)

Design ordinary machine parts from given dimensions and from calculations.

Students of ability having a definite purpose will be given an opportunity to do more advanced work along any particular line as soon as ready for such work. Some suggested lines of work are sheet metal drafting, machine detailing, structural steel, architectural drafting, and tool designing.

MATHEMATICS FOR MECHANICAL DRAWING

On the alternate evenings with the drawing, and paralleling them, are the courses in mathematics and discussion of drawing-room problems. Part (a) denotes the subject for discussion of drawing-room problems; part (b) the topics in mathematics.

COURSE (1)

- (a) During the first course such topics as the need of mathematics, lettering, the use and care of instruments, working drawings with end view, inking, are discussed and demonstrated.
- (b) The mathematics include the reduction of fractions to decimals; decimals to fractions; measurement and use of angles; the terms perpendicular, parallel, horizontal, vertical defined; the use of the equation, including a review of fractions and decimals.

COURSE (2)

- (a) The discussions in this course include the definition of a tangent to a circle and the practical method of drawing such a tangent; section views and their use, tracing and blue printing; standard bolts and conventional methods of representing tapped holes, screw threads, rivets.
- (b) The mathematics are a continuation of Course 1 and include evaluation, its application to formulas; algebraic addition, subtraction, multiplication and division, mensuration, areas, and volumes, definition of circle, diameter, circumference, radius, arc; the meaning and value of π ; simple geometrical constructions.

COURSE (3)

- (a) Course 3 has to do with an explanation of the terms used in projection, plane, perpendicular to plane, intersection of planes, prism, pyramid, altitude, properties of cylinder and cone.
- (b) Continuation of mathematics, a study of ratio and proportion is made with their application to pulleys, gears, speed. The simple geometric constructions used in developments and sheet metal "lay-outs" are taught.

COURSE (4)

- (a) The theory of screw threads is taught, with the terms pitch, lead; and various forms of threads defined.
- (b) The mathematics include algebraic squares and square root.

COURSE (5)

- (a) The discussions here follow such subjects as force, energy, power; purpose and types of cams; laws of motion; purpose of gears, different systems in use, terms used; various forms of bevel gears; worm gears.
- (b) The mathematics is a course in elementary trigonometry and includes a study of the properties of the right triangle, trigonometric functions, logarithms, the use of the slide rule.

ARCHITECTURAL DRAWING

These courses are designed for practical tradesmen who wish a thorough understanding of drawing, and also for persons who have had considerable drawing with but little building experience. In addition to the drawing, considerable time is devoted to discussion of building construction.

The courses must be taken as shown in the following outline, except in cases where satisfactory work of like character is presented.

The classes meet for architectural drawing and mathematics the same as in mechanical drawing.

COURSE A-(1)

Course (1) is given those students who have had no previous experience in drawing.

The student is taught the use and care of instruments, material, layout of plates, placing of views, simple form of lettering, etc.

COURSE A-(2)

The student is made familiar with the following:

1. Architectural form of lettering and nomenclature
2. Correct shape, form, and proportion of exterior and interior moulding and trim
3. Building construction
 - a. First floor construction
 - b. Rough framing
 - c. Corner post and partition fastenings

COURSE A-(3)

This is a continuation of building construction through such problems as:

1. Sections through first and second floor
2. Roof and rafter details
3. Cornice construction
4. Door and window sections
5. Stair lay-out and details
6. Fireplace construction

COURSE A-(4)

House planning. Each student is required to make a complete set of plans, elevations, and details for a single residence or a two-apartment house. Emphasis is placed on the design planning, conveniences and conventions in connection with the drawing.

COURSE A-(5)

A study of mechanical perspective is made as applied to building construction. This is a valuable aid in freehand sketching. A perspective of a building from a given set of plans is required from each student.

MATHEMATICS AND BUILDING DISCUSSION

All students, for the first year, will be required to pursue a course in mathematics along with their drawing.

The mathematics covered will include:

COURSE (1)

Paralleling drawing, Course (1) and (2), will be given on alternate nights, one hour of mathematics and one hour of building discussion.

- (a) The mathematics covered will include a review of fractions and decimals, interest, percentage, roots and powers, mensuration, simple equations, valuation of formulas, ratio and proportion, levers and simple machines.
- (b) The discussion will include such topics as selection of a lot for building purpose, transfer of ownership, staking out, footings and foundation walls, framing construction, roof and rafter construction, roof and wall coverings, stairways, and interior finish.

COURSE (2)

Paralleling drawing, Courses (3) and (4), will be given on alternate nights, one hour of mathematics and one hour of contracts and general specifications.

- (a) The mathematics to include builders' geometry, angular measurements, strength of simple wood beams, joists and strength of materials in so far as the solution may be made by simple algebraic expressions.
- (b) Contracts and general specifications. A study of the various standard forms, types and divisions of contracts and specifications will be made. A complete set of specifications for a single residence, not to exceed a given sum, will be drawn up by each student.

COURSE (3)

Estimating. Upon the completion of the foregoing courses, a student will be given practice in estimating quantities of material, cost of labor, short cuts, standard forms and systems.

GASOLINE AUTOMOBILE

Its Construction, Care and Maintenance

The primary purpose of this course is to give the driver or owner of a gasoline automobile some knowledge of its construction, care and repair. By means of pictures, diagrams, charts, demonstrations, tearing down and assembling, a study of the power plant, the clutch and change speed gearing, the transmission, the rear axle, and the controlling elements. Such topics as the following are taken up:

Two and four cylinder motors; the various parts and uses of the gasoline motor; fuels, carburetion, carbureters and their action; ignition sys-

tems, batteries, dynamos and magnetos, low and high tension ignition systems; adjusting and cleaning of spark plugs; lubrication, its source and conveyance; systems of cooling, air and water; the clutch, friction and sliding gear; the rear axle, methods of drive to rear wheels, the differential; and starting devices. Some of the more common troubles will be discussed, together with the means of detecting where the trouble lies, and the remedy.

MACHINE SHOP

(Cass Technical and Central High Schools)

The machine shop courses should be taken only by those who have had some previous mechanical work and who have learned to read a mechanical drawing. The tools used in metal work are much more difficult to handle than those for wood working; consequently, but little practice in reading drawings is obtained in the machine shop, but a great deal of attention is paid to the cutting tools and the machine on which they are used. The course consists of the following work:

Bench, lathe, planer, shaper, milling-machine, drill press and grinding; and, as stated above, special attention is paid to the principles of the various machines, figuring gears for thread cutting, etc., sizes of pulleys, grinding of tools, laying out and setting up work, etc. Adjustments can often be made to meet the special requirements of the classes.

The object of the machine shop course is to give special attention to those necessary branches of work which are not easily learned in the shop, and to give the machine hand a better knowledge of other machines and their relation to his work.

The class will meet in the machine shop one evening each week, from 7 to 10 o'clock. On one other evening each week, the machine shop class will meet in the recitation room from 7 to 9 o'clock and study general machine shop problems, shop mathematics, etc. Classes will be graded, as far as possible, so that the beginner and the advanced student will be in separate divisions.

SHOP MATHEMATICS

This course includes work in mathematics, such as fractions, decimals, proportion, square root, elementary algebra and trigonometry. If the student is not able to do the ordinary shop mathematics, this course should be taken from the beginning, and should alternate with mechanical drawing until he is able to use fractions, decimals, proportion, etc., quickly and accurately. The rate of progress in this course, as in all others, depends entirely on the student. Students who understand fractions should be able to do all ordinary shop problems in one term. The progress of those who do not understand fractions and decimals will depend upon the time they devote to study.

SPECIAL SHOP OR APPLIED MATHEMATICS COURSE

(Two Years' Course in Shop Mathematics)

This course presupposes the equivalent of an eighth grade education and will take about two nights a week for twenty weeks each year.

FIRST YEAR

1. Review fractions and decimals
2. Square root
3. Pythagorean theorem
4. Mensuration.
 - (a) Plain Figures:
Rectangle, triangle, parallelogram, hexagon, circle.
 - (b) Solids:
Rectangular, cylinder, sphere, hexagonal prism, cone.
5. Weights of castings and bar stock
6. Spur gears:
Figuring size of blanks, number of teeth, and diametral pitch.
7. Simple equation and evaluation of formulae
8. Cutting speeds and feeds
9. Angles and angular measurements
10. Triangulation and use of tables of functions

SECOND YEAR

1. Review triangulation
2. Logarithms
3. Slide rule
4. Levers and simple mechanisms
5. Pulley speeds, length of belts
6. Plotting and reading of curves
7. Bevel, spiral and worm gear calculations
8. Strength of materials:
Making calculations for strength and proportions of some machines, such as engine or lathe.
NOTE: The use of an engineer's hand book and slide rule will be necessary for this work.
9. Talks on power distribution, electricity (as motive power in shops), elementary metallurgy.

Additional Courses Given at Cass Technical High School

Extensive provisions have been made to offer all the subjects in the technical group at the Cass Technical High School. However, many of the more specialized courses are offered at the Cass Technical High only where the facilities and number of students make such courses advisable.

The following courses are given only at the Cass Technical High School, Grand River and High, and the Cass Technical Evening High School Annex.

In order to provide for the increasing demand for instruction in machine shop practice and other shop subjects, the Board of Education has erected a one-story building covering an entire block, bounded by Jones Street, Third Avenue, Beech Street and Second Avenue.

Beginning September, 1919, the following courses will be offered at the Annex: Machine shop practice, auto mechanics and repair, auto garage and service work, gas engine testing, vulcanizing and tire repair, auto body drafting, sheet metal drafting for building trades, foundry practice, electroplating, house wiring, factory wiring, electric motor repair, storage batteries and acetylene welding.

FORGE WORK

Few mechanics know the value of even a small amount of forge work. The shopman who is to be an all around machinist must know something about the manner of working hot metal and the effect of heat on the various kinds of iron and steel.

The course offered in the school is planned to give instruction in the chief operations of forging, such as drawing out, upsetting, binding, twisting, forming and welding. This necessitates, of course, the building and care of fires and the use of the various tools.

The proper use of the hammer is an art seldom acquired in the shop nowadays, when so little vise work is done. Forge work furnishes the best opportunity to learn this use.

After the fundamental operations have been learned, a further study of what may be called heat treatment of steels is made. This consists of the various methods of hardening, tempering, as in oil, air, water, etc., softening or annealing.

Such a course would be valuable to any one who uses tools.

In one term, working two nights per week, the average mechanic should be able to dress, harden and temper his own tools and to do fairly well any of the usual forge operations stated above.

SHEET METAL WORK

A special course in sheet metal work is given at Cass Technical High School. This course consists of mechanical drawing and the laying out of sheet metal problems. Special attention is given to the fundamental principles underlying correct lay-outs.

The work in sheet metal drawing must be preceded by Courses (1) and (2) in mechanical drawing.

COURSE S-(1)

Parallel line forms, pipes, elbows, cornices, face and return miters, skylight bars, intersections, etc., etc.

Regular tapering forms.

Principles of sweeping. Varied problems.

COURSE S-(2)

Triangulation of irregular shapes, ventilators, transition pieces, offsets, etc.

Problems in light gauge and heavy gauge metals.

COURSE S-(3)

Body drafting, hoods, mud guards, etc. Must be preceded by Courses (1) and (2). Course (1) in mechanical drawing should precede the work in sheet metal work.

The school has a good metal equipment, which will be used to supplement the class work when sufficient room can be obtained to house the equipment.

COURSE IN TOOL DESIGNING

The immense amount of manufacturing now being carried on in Detroit has brought about a demand for men skilled in tool making and tool design. Good tool designers are well paid and are always in demand. In order to be a successful tool designer, a man must first be a good mechanic, must thoroughly understand the manufacture and use of tools of all kinds, must be thoroughly versed in mathematics and must possess considerable ingenuity.

Students desiring to take the course in tool designing must have had at least two years actual machine shop experience and at least one year mechanical drawing. They should understand the fundamentals of arithmetic mechanical drawing. He should understand the fundamentals of arith-

The course consists of the study of mathematics, lectures, and design work on the drafting board. From time to time students are asked to investigate certain subjects and report to the class. Machinery's Handbook is used as a reference text.

The study in mathematics will include review of arithmetic calculation of areas and volumes, ratio and proportion, weights and measures, leverage and screws, belts and pulleys, use of formulae, square root, horsepower of belting and machines, logarithms, solution of equations, solution of triangles, pneumatics, hydraulic and strength of materials.

Lecture and design work will cover composition of iron and steel, steel alloys, hardening and tempering, cutting tools, heat treatment of metals, furnaces and pyrometers. Quenching baths and mediums, cold rolling, punches and dies, drop forging, abrasives, cams and cam design, jigs, and fixtures, instruments of precision, bearing and lubrication, gear design.

BLUE PRINT READING

This course will deal entirely with the interpretation of mechanical working drawings and will not include architectural or structural prints.

It is designed for production workers, machinists, inspectors, cost clerks, and especially for those who intend entering the machine shop or factory from the non-essential employments.

The course will consist of 20 lessons of about ten weeks' work, and will be developed by means of free hand sketching, lectures and stereopticon. The definition of shop terms used on prints and the description of shop processes, machines and tools will be features of this course.

WOOD WORKING

(Bench Work and Wood Turning)

This course is designed for a four-fold purpose:

First:—To teach the elements of mechanical drawing so that students may be able to interpret readily the blue prints used in shops.

Second:—To teach the selection, care, and use of the ordinary bench tools, including the measuring, laying out, cutting, and miscellaneous tools. A few typical joints are constructed.

Third:—To teach the use of the band saw, giving special attention to safety precautions.

Fourth:—To give to those who plan to enter the pattern making course a knowledge of wood turning, including the various cuts and processes involved in spindle, face plate, and chuck turning.

After finishing this course, a student may enter either the cabinet making or the pattern making class. There is also a third option, the advanced wood turning class, in which a number of useful and ornamental articles, including pin trays, nut dishes, candle sticks, and lamps, may be turned, using various hardwoods such as walnut, maple, oak, and mahogany.

CABINET MAKING

Before taking this course, a student should have had the course in bench work outlined above or equal preparation in order to be able to use the ordinary wood working hand tools without difficulty.

In this course, one first selects any piece of furniture, within his ability to construct. Then comes drawing the piece and deciding upon the dimensions, unless a blue print is being used; listing the parts and making out a stock order; laying out, cutting and assembling the parts, and finally applying suitable finishing materials.

The stock, planed to size, may be purchased at cost from the school mill. All furniture may be taken home as soon as finished.

PATTERN MAKING COURSE

This course is designed primarily for pattern making apprentices to enable them to acquire a more thorough knowledge of the fundamentals of wood pattern making than they are usually able to get during the first years of their apprenticeship. It is open, however, to any others who desire a knowledge of this important branch of the machine trade.

In addition to the making of patterns, the course includes a study of the related work of the drafting room, foundry and machine shop, together with a study of the materials and appliances used in the pattern shop. After a few months, a student should be able to read a blue print quickly and accurately, to plan and construct a pattern, to run a mold from it, and to make a plaster of Paris casting.

Among the types of patterns constructed are solid, split, built up, and loose-piece patterns, and patterns involving the use of green sand cores, and horizontal and vertical dry sand cores, together with the construction of suitable core boxes for the same.

For the more advanced students, there are ornamental patterns, skeleton patterns and pattern sweeps. The advanced students have the use of a large pattern maker's lathe, pointer, planer, saw table, sander and a trimmer, in addition to the benches, lathes, and band saw used in the elementary work.

PRINTING

The following course is open to those who are engaged in the printing trade. The subjects will be given so as to fit in with and to supplement the daily work of those who enroll. Much of the work will not be class work, but the group plan will be largely followed. Individual instruction, as the need arises, will care for particular cases.

Print shop work on Monday and Wednesday evenings; technical trade information on Tuesday and Thursday evenings. Hours from 7 p. m. to 9 p. m.

PRACTICAL ENGLISH FOR PRINTERS

1. Technical spelling
2. Giving instructions to others in writing
3. Specification writing; contracts; bids
4. Copy holding; voice production
5. Proofreading; standards, and personal preferences

TRADE ARITHMETIC

1. Point system. Type high
2. Em measurements; basis
3. Inch measurements
4. Paper stock; sizes, weights, margins, cutting, estimating
5. Time tickets
6. Job estimates; elements of an estimate; conditions, time, stock, machinery
7. Book and catalog work

TRADE TECHNIC

Composition: The case; spacing; justifying; lining up; short measure; commercial forms of many varieties; designing for customers; lay-outs.

Imposition and Lock-up: Single forms; forms two-on, and three-on; mixed forms; forms for two-color jobs; cross rule forms; forms for folding, hand or machine.

Job Press Work: The Golding press, the Chandler & Price press, the John Thompson press. Construction and operation; work in simple and register jobs; feeding and make-ready.

PRINTING DESIGN

This course includes: Space relations, perspective, free-hand drawing, lettering and color design.

TAILORING DESIGN

(Eastern Evening High School)

The course in tailoring design is a strictly tailoring course for men. The work covers the subject of designing and grading of men's patterns. Sack coats, frock coats, overcoats, vests and trousers are designed, patterns made and the garments completed.

SCIENCE GROUP

CHEMISTRY

Courses (1) and (2)

Lecture, Recitation, and Chemical Mathematics

This course gives the fundamentals of general inorganic chemistry, which are required in the study of analytical chemistry, organic chemistry, chemical, electrical, and mechanical engineering, metallurgy, medicine, pharmacy, or general knowledge of chemistry. It is accepted for university entrance credit.

A study of chemical nomenclature, valence, and equations of acids, bases, and salts; neutralization, hydrolysis, and ionization; and a discussion, explanation, and application of the laws of chemistry, which form the basis for explaining all chemical action, are included.

Next, the elements and their important compounds are classified. The processes for procuring the free elements from their native sources, technical methods for preparing the compounds from raw materials, their characteristic action and the industrial application, are developed.

The study of chemical arithmetic is an important portion of the course. A mathematical explanation is the only means of coming to a true understanding of the many simple chemical laws.

Laboratory work is required supplementary to the recitation and lectures. The work follows the natural lines of investigation, developing a knowledge of the chemical reaction and its interpretation. Emphasis is put on skill in laboratory manipulation or technic.

This class meets three evenings a week, from 7:00 to 10:00, one hour being given to recitation and the two hours to laboratory.

CHEMISTRY (3) AND (4), QUALITATIVE ANALYSIS

This course is for those having had one year of high school chemistry or Courses (1) and (2).

Qualitative analysis begins with the study of the reactions of the basic and acid elements and their compounds with different reagents. This is followed by the practical application of the knowledge gained in the analysis of unknown substances in solution, and solids in the form of mixtures—alloys and ores.

Credit is given for this course in pharmacy. It follows Course (1) in the study of the various advanced courses mentioned under Chemistry (1).

The class meets three evenings a week, from 7 to 10 o'clock.

PHARMACY

(Cass Technical High School Only)

The following course extends over four years if taken only at nights. Classes which meet three afternoons and three nights a week allow the course to be finished in two years. The course prepares a person to take the State Board Examination upon its completion.

Any young man or woman wishing to prepare for a good business or profession has an excellent opportunity.

1. a. Chemistry, general inorganic. (See Courses (1) and (2). Chemistry.)

1. b. Manufacture and technic (manufacture of pharmaceutical preparations, according to the National Pharmacopeia and National Formulary, and a development of pharmaceutical technic.)
 2. a. Chemistry, qualitative. (See Courses (3) and (4), Chemistry.)
 2. b. Pharmacognosy—Lecture and recitation.
 2. c. Pharmacy practice—Lecture and recitation.
- All courses, 7 to 10 p. m., three nights.

NURSES' AND HOUSEHOLD CHEMISTRY

(Cass Technical High School only)

The past few years numerous calls have been made for a special course for young women who desire to enter the profession of nursing, and of women who desire to know something of household chemistry. According, last year, a special course to nurses was given.

This year a course, open to nurses and women who are interested in scientific knowledge of life and its management, is given.

The fundamental principles of chemistry, developing a knowledge of chemical nomenclature, chemical laws, and equations are mastered. The source, characteristics, and use of the more common inorganic acids, alkalis, and salts are taken.

Soaps, cleaning agents, and scouring powders are studied from the standpoint of cost of manufacture and of their utility.

This is followed by a study of the carbon compounds. The organic groups are defined and studied. This includes compounds of hydrocarbons and their derivatives, from which the many synthetic dyes, blueings, perfumes, flavors, and medicines are made; the carbohydrates, fats, and proteins, upon a knowledge of which the scientific arrangement of diet and a study of foods depends; and the nature of enzymes, which are arousing much interest in their effect upon the health of the body, make this course of especial interest to nurses, teachers, and head of households.

Laboratory practice accompanies all work in this course.

COURSES IN ELECTRICITY

(Cass Technical High School only)

The course in electricity is designed to meet the needs both of the beginner and the student who has already mastered the fundamentals. The work is equally divided between the study of direct and alternating current systems, each of which is in turn subdivided as follows:

Direct currents:

Elementary ideas,

- Machines.

Alternating currents:

Single and polyphase circuits.

Single and polyphase machines.

Each half of this course requires approximately 100 hours of laboratory work and 70 hours each of recitation and mathematics. The whole course can be completed in two years by those who are regular in attendance. No student may enroll who has not completed the equivalent of eighth grade preparation,

Due to the popularity of this course, preference is given to those applicants who have a working knowledge of algebra, but classes will be organized to meet entrance requirements.

The laboratories are well equipped with special apparatus for demonstrations; and with meters, rheostats, machines, switchboards, etc., for the individual use of the student.

The elementary D-C work is arranged to acquaint the beginner with a working knowledge of meters and other apparatus. Current, voltage, and power relations are discussed first for simple and later for complex circuits. Ohm's Law furnishes the working basis for this work, which is followed by a study of the magnetic circuit as a preparation for machine considerations.

The D-C machine work begins with a study of the generator. Each type is carefully discussed and their various operating characteristics determined by the student in the laboratory. Motors are next treated in like manner. Emphasis is laid on commercial methods of installation, control and "trouble shooting." Machine efficiencies are determined by various shop and laboratory methods, and the course concludes with such final laboratory jobs as the parallel operation of inter-pole machines, and the operation of boosters.

The D-C course is now followed by the study of alternating current machinery—transformers and rotating apparatus—and the peculiar conditions existing in circuits which supply current for power and lighting loads of this type. Ohm's Law for the A-C circuit is carefully developed and its numerous applications to practice discussed in the recitation by aid of problems, and investigated in the laboratory through experiment.

In this connection the topics of capacity and inductance are thoroughly defined, together with their important effects in A-C circuits. Calculations and experiments to determine voltage, current, and power relations in single and polyphase circuits concludes the all-important work preliminary to the study of machines.

The construction, winding, and operation of alternating current generators, motors, and transformers is discussed in detail, particular stress being laid on the operating characteristics of the various types of each. At the completion of this work the student should be able to handle intelligently the complete electrical lay-out of a manufacturing plant. This includes the consideration of generator capacity; efficient generating, distributing and operating voltages; selection of the best adapted generator, transformer, and motor units; and the installation, wiring, and successful operation of the system as a whole. Proficiency in the operation of electrical machines can only be obtained by actual experience, and to this end a great many practical machine tests are required in the laboratory. They include: Voltage regulation, synchronizing and parallel operation of A-C generators; speed-load and starting torque characteristics of induction motors (squirrel cage and wound rotor), and synchronous motors; efficiency and temperature tests on motors, generators, and transformers.

In order that the above A-C course may be completed in one year, only those students will be enrolled who have satisfactorily completed a course in algebra through quadratic equations.

COMMERCIAL GROUP

Commercial courses are offered in all of the evening high schools. This gives an unusual opportunity for students who wish to prepare themselves for business and, at the same time, to secure high school credits which may be used toward obtaining a regular high school diploma if it is desired.

The course includes Commercial Law, Salesmanship, Elementary and Advanced Bookkeeping, Cost Accounting, Shorthand, Typewriting, Business English, Business Arithmetic, Penmanship and other business subjects for which there is sufficient demand to warrant the organizing of a class.

The following suggestive outlines of the various subjects offered will give an idea of the ground covered. It will be noted that an attempt is made to minimize the non-essentials and to emphasize the practical points of business.

COMMERCIAL ENGLISH

Classes in Commercial English meet two evenings a week and each recitation is two hours in length. The aim of the course is to develop the ability to produce good business letters and other business literature. With this end in view, such review of the fundamentals of English grammar is given as the individuals composing the class may need. This is followed by a careful study of the best business literature. Part of each evening is devoted to examination of business letters, etc., explanations by the instructor, discussions by the teacher and pupils, and practice work by the pupils.

Such time is devoted each evening to penmanship practice as seems necessary to enable pupils to quickly present in an attractive and legible manner the product of their Commercial English course.

SHORTHAND

Course (1). Texts: Gregg Manual, Gregg Speed Studies. The first nine lessons in the text are given in this course. Letters from Lessons VII, VIII and IX of Gregg Speed Studies to be introduced in this course with Lessons VII, VIII and IX of the text. Three evenings for each lesson may be allowed. At the end of the course students will have a good foundation in the principles of shorthand and will be able to use all word signs in the system, simple phrasing, and a limited word vocabulary. The letters in the Gregg Speed Studies give the student practice in reading shorthand notes and taking easy dictation.

Course (2). Texts: The same as used in Course (1). The remaining eleven lessons in the Gregg Manual will be completed, and with each lesson the corresponding lesson in the Gregg Speed Studies to Section XXI will be given. Two evenings for each lesson may be allowed. This course will give the student a complete study of the principles of shorthand, and a comprehensive study of abbreviations, simplified word out-

lining, prefixes, suffixes, and advanced phrasing. This study will give the student the ability to read shorthand notes readily and write notes with ease and facility. The student will be able to take letters from dictation at an approximate speed of 50-69 words per minute.

Course (3). Texts: Gregg Speed Studies. Dictation of business letter. Practice dictation for one hour is given on letters studied in Course (2) to increase student's speed. Good business letters are used as new matter dictation and as models in the study of attractive arrangement. Transcripts are made on the typewriter. This course includes helpful suggestions for a stenographer regarding applications, office routine, dispatch of mail, telephone, telegrams, banking, filing, and shipping orders, and a general co-ordination of all office work. These courses result in sufficient preparation to fit students for office amanuensis work. The thorough drill on principles during this course gives a foundation, after continued study, that will fit students for high grade positions such as government work, private secretary, reporting, etc.

TYPEWRITING

Text—Rational Typewriting. Gregg Publishing Co.
System—Touch.

Course (1) The course in typewriting is open to all students, whether elementary or advanced.

In the elementary course the student masters the keyboard, by following the budget work in his text systematically. All satisfactory budgets are credited on record cards and filed. At the end of this term the student should have finished approximately 10 budgets, and be able to write simple sentences at the rate of 15 words a minute.

The aim in this course is the mastery of the keyboard and the development of accuracy rather than speed.

Course (2). Satisfactory budgets are credited and filed as in the previous course and the student is given word and punctuation drills, practice on numerals, and numerous short letters, the arrangement of which is especially emphasized. By the end of the term budgets 11 to 20 should be completed and an approximate speed of 25 words a minute acquired.

Course (3). The student is so far advanced that he may be able to complete budgets 20 to 30, comprising long letters, addresses, envelopes and letter folding, centering, tabulation and long articles. Stress is laid upon accuracy, neatness and speed.

Such a course may easily be covered by the average night school student. In some cases, however, the student may progress even more rapidly, completing the more advanced work of the text, such as practice in manifolding, writing telegrams, postal cards, filing cards, legal documents, building specifications, etc. He is in no way restricted as to the amount of work he may do, providing his budget work is satisfactory.

BOOKKEEPING

Text: Miner's Complete Bookkeeping.

The course in Bookkeeping is divided into three parts: Elementary, Advanced and Cost Accounting.

Course (1). The elementary course consists of preliminary work from a text book which is intended to give a student the proper understanding of a ledger account, the principles of debit and credit, and the classification of accounts. Following these preliminary exercises, the student works up a set of double entry books, consisting of the Purchase Book, Cash Book, Sales Book, Journal and Ledger.

Course (2). The advanced course is for students who have completed the elementary course or who, upon entering, have some knowledge of bookkeeping. In this course the student writes up a set of books that illustrates the accounts to be found in an up-to-date set of books in any large office. These books emphasize, in particular, the use of controlling accounts, the analysis of accounts, and the drawing up of business and financial statements.

Individual instruction is given to a large extent, and students may advance as rapidly as their ability and time permit. About eight weeks is necessary to complete the introductory work of the elementary course, and about thirteen to fifteen weeks is usually required to complete the set of books to be worked up by a student in this course. One who has finished the course satisfactorily should be capable of being a good assistant or might take charge of a small set of books. The advanced course will require from eighteen to twenty-six weeks. Upon completion of this course the student should have a thorough understanding of the routine of bookkeeping and should be able to take full charge of a set of books.

COST ACCOUNTING

(Wilkins High School of Commerce)

This course is designed to give a general knowledge of the principles of cost accounting, and practice in applying those principles by writing up a set of books designed for a manufacturing business where cost records are used. It is necessary that students taking up this study should have a working knowledge of bookkeeping, either from training or practical experience. Special problems in accounting are taken up in so far as time permits and students are capable of understanding them.

The length of time necessary to complete each course varies, depending on the ability of the student and the amount of time he can devote to the work outside of school hours.

BUSINESS ARITHMETIC

Text: Van Tuyl's Complete Business Arithmetic.

Classes in Business Arithmetic recite two evenings each week, two hours per evening. Instruction in this subject is divided into two courses as follows:

Course (1). The beginning course involves a review of the simple operations of arithmetic, covering Addition, Subtraction, Multiplication,

Division, Common and Decimal Fractions, and Aliquot Parts as applied to Billing, Commercial Discounts and Interest.

Course (2). The second course goes into the application of Arithmetic to the problems of Finance, Banking, Taxation, Insurance, etc. To be eligible to this course students must have had Course (1) or its equivalent.

COMMERCIAL LAW

(Wilkins High School of Commerce)

Text: Gano's Commercial Law and Michigan Statutes.

It is the purpose of this course to give the student a general knowledge of the most common phases of business law so that he can apply them in his every day business undertakings.

The course is given to meet the demands of the business man, shop man, the office man, and covers all points of business law that come up in the course of the day's work.

The course is outlined to cover the following subjects:

I. Contracts.

II. Sale of Property.

(a) Personal.

(b) Real Estate.

III. Negotiable Instruments.

(a) Notes.

(b) Bills of Exchange.

1. Domestic.

2. Foreign.

IV. Agency.

V. Bailment.

VI. Ownership.

(a) Partnership.

(b) Co-operation.

(c) Corporation.

Citations of cases giving the holdings of different states are used throughout the course; special attention being given to the holdings of the Michigan courts.

COMMERCIAL LAW AND BUSINESS CREDITS

(Central Evening High School)

Text: Gano's Commercial Law.

This course is designed for people connected with Credit Departments of Commercial Houses and prospective law students.

One night a week is devoted to the study of commercial paper, essentials of contract, and transfer of title to property, etc.

One night is combined text-book and lecture course. The lecturers are business men of the city, selected by the Detroit Credit-men's Association. The topics are numerous, covering wholesale and retail credits; foreign and domestic credits, bankruptcy and kindred subjects.

SALESMANSHIP

(Wilkins High School of Commerce)

Text: "Salesmanship," by Hoover. Discussions and lectures by successful salesmen.

This subject has a very important place in the course of study. It was in Detroit that the idea originated that resulted in the World's Salesmanship Congress. The various papers and discussions presented at this Congress and the one that followed it, proved so very helpful and practical that Salesmanship clubs have been organized in all the larger cities for the study of problems in selling.

The course includes such suggestive topics as the following:

I. Salesmanship.

- (a) An attempt is made to acquaint the student with the broad idea of Salesmanship.
- (b) The "Service Theory" is presented and discussed. The 'Principles of Psychology which enter into Salesmanship are explained and studied under such headings as:
 - (1) Attention.
 - 1. Voluntary.
 - 2. Involuntary.
 - (2) Interest.
 - 1. Direct.
 - 2. Indirect.
 - (3) Desire.
 - (4) Determination or decision.
 - (5) Action.
- (d) Kinds of Salesmanship
 - 1. Wholesale.
 - 2. Retail.
 - 3. Agency
 - 4. Canvassing
- (e) The Factors in a sale.
 - (1) The salesman.
 - (2) The buyer.
 - (3) The subject of the sale.
 - (4) The process of the sale.

II. The Salesman.

- (a) His personal appearance.
- (b) His attitude.
- (c) His health.
- (d) His education.
- (e) His preparation for selling.

III. The Customer.

- (a) Kinds recognized by psychologists.
 - 1. The vital.
 - 2. The motive.
 - 3. The mental.

(b) Characteristics of these types of customers.

- (1) The cautious buyer.
- (2) The argumentative buyer.
- (3) The procrastinating buyer.
- (4) The indifferent buyer.
- (5) The prejudiced buyer.
- (6) The imaginative buyer.

IV. The subject of the sale.

(a) Subjects for selling demonstrations should be assigned and students should study carefully every detail in regard to the goods, including:

- (1) The raw material used in manufacturing.
- (2) The process of manufacture.
- (3) The ranges in sizes, qualities, colors and prices.
- (4) The guarantee on the goods.
- (5) Present tendencies in the use of the goods, etc.

V. The process of the sale.

- (a) The pre-approach.
- (b) The approach.
- (c) Greeting the prospect.
- (d) Keeping control of the interview.
- (e) Keeping prospect interested.
- (f) Avoid talking too much.
- (g) Avoid negative suggestions.
- (h) Answering objections.
- (i) The psychological moment for closing.
- (j) The close of the sale.

ACADEMIC DEPARTMENT

The course of study in the academic work is planned to meet the requirements both of students who wish to take special work in certain lines, and of those who wish to complete their regular high school work. A student of the latter class who does passing work of the grade required in the day school will, on completion of a course in the Evening High School, receive from the teacher in charge a credit slip entitling him to receive credit for the work in the day school. As the Central Evening High School is on the approved list of the University of Michigan, students who make good records in this school may enter the University on recommendation.

LANGUAGE GROUP

ENGLISH

The purpose of the English courses in the Evening Schools is to give instruction in grammar, composition, and literature in the most practical and concise form possible. To this end an effort is made to combine the three elements in each lesson by giving one-half of the period to the technical study and composition, the other to literature.

Each course covers twelve weeks, or twenty-four lesson periods of two hours each.

COURSE (1)

- (a) Technical Study—Sentences: Elements of; kinds; structure; rhetorical forms. punctuation of. Clause: Kinds; uses of; punctuation of. Phrases: Kinds of. Rules for capital letters. Fundamental law of punctuation. Spelling and word study.
- (b) Composition—The sentence, with its punctuation in all forms and uses.
- (c) Literary Study—Greek and Roman legends and myths. "Stories from the Iliad," "Julius Caesar."

COURSE (2)

- (a) Technical Study—Paragraph: Structure of; unity in; topic sentence. conclusion sentences; transition sentences.
- (b) Letter Writing—Social and business forms.
- (c) Literary Study—Formation of the English language. Stories from the Anglo-Saxon: "Beowulf," "Tales of King Arthur," "Proverbs of King Alfred."

COURSE (3)

- (a) Technical Study—Irregular verb forms. Special uses of words. Description: Concrete and abstract forms of. Destructive and constructive writing.
- (b) Composition—Book reviews; dramatic notices; reports on speeches; editorials, new articles.
- (c) Literary Study—"Tatler," "Spectator," "Rambler," "De Coverly Papers," modern magazines.

COURSE (4)

- (a) Technical Study—Forms of prose. Forms of poetry. Versification. Types of novels. Structure and types of drama. Figures of speech (reviewed).

- (b) Composition—Character sketches. Comparisons. Description and narration based on reading.
- (c) Literary Study—Biography: Johnson's "Lives of the Poets." Novel, "Ivanhoe." Poetry: Didactic—Pope's "Essay on Man." Satire—Moore's "Fudge Family in Paris." Descriptive: Goldsmith's "Deserted Village." Pastoral: Pope's "Pastorals." Lyrics—ballad: Longfellow's "Skeleton in Armor. Song from Moore or Burns. Ode: Lowell's "Commemoration Ode." Elegy: "Gray's Elegy." Sonnet—from Milton to Shakespeare. Epic—metrical romance: Scott's "Lady of the Lake." Metrical tale: Byron's "Prisoner of Chillon." Mock epic: Pope's "Rape of the Lock."

COURSE (5)

- (a) Technical Study—Exposition. Forms of; paragraph, types of. Argumentation. Direct and indirect; deductive and inductive. Review of grammar and punctuation.
- (b) Composition—Paragraphs by definition, contrast, obverse, detail, example, cause and effect. Argumentation, in simple forms.
- (c) Literary Study—Selections from great American speeches. Lincoln, Webster, and others: Learn: Gettysburg Address. Selections from work studied.

COURSE (6)

- (a) Technical Study—Literary forms. The Essay: Personal and didactic; form, subject matter, author's purpose and mental viewpoint. The Oration: Parts of—exordium, divisions of subject, statement of purpose, arguments and facts, appeal. The Novel: Realistic and romantic; structure and literary value. The Drama: Structure and logical divisions; history of; modern plays and playwrights.
- (b) Composition—Ten themes, illustrating literary forms.
- (c) Literary Study—Essay: Palmer's "Self Cultivation," Macaulay's "Johnson," or Emerson's "Compensation." Oration: Lincoln's "First" and "Second Inaugurals"—compare with Wilson's speeches on "Declaration of War," and "Fourteen Points for Peace." Novel: Careful study of "Silas Marner." Drama: Technical study of "Macbeth."

COURSE (7)

- (a) Technical Study—Literary form reviewed. Description—personal, details of landscape, building, color in landscape, mood, sound, taste, touch. Exposition—six forms of expository paragraphs; narration related to description, exposition and figures of speech. Argumentation: Deductive reasoning—the syllogism. Inductive reasoning—sign, example, cause and result.
- (b) Composition—Review of technical points, study of the brief; aim—letter perfect themes.
- (c) Literary Study—Models from standard authors illustrating forms studied.

COURSE (8)

- (a) Technical Study—General review of all literary forms, with special attention to the masterpieces read.

- (b) Composition—Careful study of the brief, debate, essay, and oration. "Letter perfect" theme for each.
- (c) Literary Study—Essay: Carlyle's "Essay on Burns." Argument: "Burke's Conciliation." Poetry: Milton's "Minor Poems." Drama: "Hamlet."

NOTE: In all courses in English, students should be encouraged to read as much outside of class as possible.

LITERATURE

This course is intended for those who wish to obtain a reading knowledge of English and American literature, including a general survey of the subject. Students who wish to pursue the subject further will find that this class work will serve as a foundation for a later course in reading to be done by themselves.

LATIN

The courses in Latin are of interest to students preparing to study medicine, or law. Students preparing to study medicine or surgery will find that the four courses outlined below will satisfy the requirements in Latin in medical colleges. The first year's work is a study of declensions, conjugations, and the more common constructions. Consecutive reading in Caesar and prose composition work comprise the second year's work.

Latin (1) D'Ooge's Latin for Beginners—Lessons I-XXXVI.

Latin (2) D'Ooge's Latin for Beginners—Lessons XXXVII-LXIII.

Latin (3) D'Ooge's Latin for Beginners—Lessons LXIV-end.

Reading—Caesar's Gallic Wars, Book II.

Latin (4) Caesar's Gallic War, Books III and IV.

Composition—Nutting's Latin Reader—Lessons I-XX.

FRENCH

As a result of the close relationships of the Americans and French, the interest in the French language has greatly increased. It is evident that the relations of the two peoples in the future will continue to be much closer and hence a knowledge of French will be of great value. Students interested in French for its literary or artistic value, also, will find the instruction opening up to them a great field of entertainment.

COURSE (1)

The aim of Course (1) is to train the ear, the tongue, and the eye; the ear, to understand simple spoken French; the tongue, to feel the differences between French and English sounds, so that the pupil may be able to read intelligibly; the eye, to read simple French understandingly. French is, therefore, the language of the classroom. Regular attendance is a necessity. The text used in this course is Meras' Premier Livre.

COURSE (2)

The second half of the first year continues the work in grammar and in reading, and gives more attention to simple writing. Here, as always, the classroom language is French.

Books used: Grammaire française, Bruce.

La tache du petit Pierre, Mairat.

Le voyage de M. Perrichon, Labiche et Martin.

COURSE (3)

The third course is intended for students who can understand simple spoken French and who can read with fair ease. It continues the habit-forming by reading, speaking and by study of grammar.

COURSE (4)

Continuation of Course (3).

SPANISH

The courses in Spanish are of value to all interested in the study of modern foreign languages, but especially to those who expect to do business with the Central, or South American countries, a business bound to expand greatly in the near future, partly as a result of conditions brought about by the recent war. Many large commercial corporations need special correspondents versed in Spanish to look after this business. The courses themselves are planned to satisfy college requirements in Spanish and are outlined below.

COURSE (1)

Introduction to Castilian.

Text: Worman's New First Spanish Book, supplemented by grammatical annotation, dictation, and verb drill. Poems.

COURSE (2)

Beginning the study of formal grammar.

Simple readings and reviews. Text: De Vitis, Reader. Conversation and dictation emphasized. Emphasis is placed on the subjunctive mode.

COURSE (3)

Composition—oral and written. Text: Waxman's "A Trip to South America"; every third lesson, a theme based on the text. Original compositions. Commercial forms. Reports on South American geography and commerce.

COURSE (4)

Introduction to Spanish literature.

Study of contemporary masters, preparatory to serious reading later. Thorough review of grammar, and irregular verbs committed to memory. Idioms and original themes.

AMERICAN HISTORY

The course in American history is intended to explain and interpret the present trend of events in terms of the past history of the United States. The economic conditions since the Civil War, the great moral questions involved in recent political and industrial events, and the problems arising from America's participation in the World War will be studied in the light of American traditions and political experience. The earlier history of the country will be linked up with the present, in order to illuminate the vital happenings of our immediate past.

McLaughlin's History of the American Nation is used as a basis for study, supplemented by considerable outside reading.

MATHEMATICS

ALGEBRA

This subject is given in three courses and requires one and one-half years. Each course can usually be covered in one-half year.

ALGEBRA (1)

This course discusses positive and negative numbers and drills the student in the fundamental processes of addition, subtraction, multiplication and division of algebraic numbers. It also teaches him to solve simple equations and to use the equation as an instrument for the solution of problems. The equation is presented frequently throughout the course and the student is trained constantly to see the principles underlying the solution of equations.

ALGEBRA (2)

This covers factoring and the solution of equations by factoring, highest common factor, lowest common multiple, fractions, fractional equations, linear simultaneous equations, and square root.

ALGEBRA (3)

This course trains the student in ratio and proportion, in the construction of graphs and their use in solving equations, in quadratic equations, exponents, radicals, radical equations, and imaginary numbers.

The courses outlined above are given as presented in Lyman and Darnell's text, which is the book used, and upon their satisfactory completion the student is given credits that are accepted in preparation for college.

GEOMETRY

Geometry is offered to all students who wish a year's course to satisfy entrance requirements at college. For all who expect to study engineering a knowledge of geometry is essential. The first two courses cover the field of plane geometry. The course in solid geometry, Course (3), will be offered whenever there are enough students to justify the formation of a class. Solid geometry, as well as plane, is required of those wishing to take up engineering at the University.

The courses in geometry should follow Course (2) or Course (3) in Algebra.

COURSE (1)

This includes Books I and II of Sanders' Elements of Plane and Solid Geometry.

COURSE (2)

Study is continued in Books III, IV, and V. These two courses cover one year's work.

COURSE (3)

The study of solid geometry usually takes one-half year.

TRIGONOMETRY

Trigonometry is fundamental to any further study of mathematics. It is the place where geometry finds its application in a great number of practical problems involving measurement. Almost every engineering problem involving a computation is based on trigonometry. The study of logarithms, which is a part of the course in trigonometry, opens the way to a new method of computation that is of the greatest importance.

The following topics are discussed: (1) angles and their functions; (2) tables and their use; (3) the right triangle; (4) logarithms; (5) shop problems in trigonometry; (6) the oblique triangle. and (7) problems in triangulation.

ARITHMETIC

Students enrolling for a course in arithmetic will be given an examination to find out what work they are prepared to do, and will then be started at such point as their ability will permit. Those preparing for definite lines of work, such as are found in office, store, or factory, will then be permitted to follow such a course as will best prepare them for the particular work in view. Those having no definite aim other than the desire for a broader knowledge of arithmetic will pursue a more general course.

SCIENCE GROUP

CHEMISTRY

COURSE (1)

This course parallels Course (1) given in the day high school. The general aim of this course is to give the fundamentals of elementary inorganic chemistry, to give the pupils a higher appreciation of chemical and physical phenomena, and, at the same time, to make the course so practical that it will be a part of the pupil's daily life. While practical application is the keynote, sufficient emphasis is laid upon theory to give a broad, firm foundation for future work, and to develop a scientific habit of thought.

This course includes a study of oxygen, hydrogen, water, solutions, atomic theory, molecular theory, equations and nomenclature, gas laws, nitrogen, the atmosphere, hydrochloric acid, chlorine, dissociations, acids, bases and salts, valence, ammonia, refrigeration, nitric acid, and nitrates in their relation to life processes. Practical application finds wide use in the developing of the above mentioned subjects.

Since a mathematical explanation is the best means of obtaining a thorough knowledge of the many simple chemical laws, a study of chemical arithmetic is an important part of the course.

Laboratory work is required supplementary to the recitations and lectures. The work follows the natural line of investigation, developing a knowledge of chemical reaction and its interpretation. Emphasis is put on skill in laboratory manipulations or technique.

The class meets two evenings a week; one evening from 7 to 9, and the other from 7 to 10.

COURSE (2)

This course parallels Course (2) given in the day high school. It is a continuation of Course (1), leading to the completion of elementary chemistry.

In this course sulphur and carbon are given a leading place. The value of plants in storing energy, the value and costs of foods, the distillation of coal and petroleum, the composition and use of fertilizers, are among the matters of vital importance that are studied. Attention is also paid to molecular weights, atomic weights, volumetric relationship to combustible gases and the method of determining relative power developed from these gases. In connection with the chemistry of sodium, potassium, ammonia, calcium, iron, steel, aluminum, copper, lead, and silver, the study of manufacturing processes is taken up in each case, with the production of typical compounds, along with commercial relationship.

Laboratory work is also required supplementary to the recitations and lectures. Class meets as in Course (1).

Students completing these two courses in a satisfactory manner will be given one unit of college entrance credit, if desired.

PHYSICS

The object of this course is to classify a certain mass of facts which all students gain in their everyday experience with things in general. When properly classified, they are seen as special instances under a few far-reaching laws, the relations between which are continually emphasized. An attempt is made to treat this subject in such a way that students are not repelled by any unnecessary prominence of mathematics.

The subjects treated are mechanics, heat, electricity, sound and light. The first hour is used by the students to perform experiments which illustrate and verify the principles of the subject; the second hour is devoted to lectures with experiments or to quizzes.

The course is especially adapted to those students who feel the need of it in connection with their work or business. The course will also give a good foundation for the continuance of the subject in college, and is accepted for entrance to such advanced schools.

The books used are Adams' Physics for Secondary Schools and Adams' Physical Manual.

DOMESTIC SCIENCE AND ART GROUP

COOKING

The domestic science course is outlined to teach the manipulation of the devices in the kitchen, and to give them a knowledge of food materials, and the food principles necessary for a well-nourished body. The work is presented in natural sequence, the various subjects of food preparation being presented in groups. Following is the general order of work:

- Fall Term: 4 lessons on fruit cookery
- (1) Preservation
 - (2) Jellies and jams
 - (3) Fresh fruit
 - (4) Dried fruit
- 6 lessons on cereal cooking and table service
6 lessons on milk and cheese
6 lessons on eggs and milk
8 lessons on meat and meat substitutes

- Winter Term: Flour mixtures:
- 6 lessons on quick breads and table service
 - 6 lessons on cakes and cookies
 - 3 lessons on pastry
 - 4 lessons on fats and oils
 - 6 lessons on salads and desserts
 - 3 lessons on meal preparation

SEWING

The course of study in sewing for evening classes is broad in scope to meet the varied needs and tastes of students.

It aims to aid in making young women more efficient homemakers, to serve as a preparation for home service, and to give the homekeepers' opportunity to increase their knowledge of finer details of sewing. Taste and judgment are developed in selection and use of material and trimmings; judgment in selection of design and color combination, and the adjustment of commercial patterns to their needs.

In connection with the work, short talks are given upon the following subjects:

- Textiles—Proper selection.
- Color-setting and shrinking.
- Care of clothing.
- Cleaning and renovating used materials.

ELEMENTARY COURSE

- (1) Care and use of machines.
- (2) Aprons. (Hand or machine.)
- (3) Under garments.
- (4) Simple wash waists and dresses.
- (5) Household linens.

ADVANCED COURSE

- (1) Silk and wash waists and dresses.
- (2) Suits.
- (3) Coats.
- (4) Remodeling garments.

MILLINERY

The millinery course consists in the manufacture of hats. The pupils make their own frames, covering them with the material desired, and trimming them with flowers or bows which they have made. It is expected that each person will make four hats of different design during the session.

MUSIC GROUP

This department includes courses in chorus, orchestra, piano, violin, and public school music.

The purpose of the chorus, orchestra and instrument classes is to develop appreciation, which means the capacity to understand, discriminate, and respond to musical appeal. It is the aid to guide both singers and players in the artistic use of their instruments in ensemble work. Music is essentially a social subject and its study is complete only in so far as it has solved and met community needs. To this end, and also to the end that students may gain the self-confidence and poise, that are the necessary equipment of all musicians, all students of the music department are required to take part in regular monthly concerts for the students of the evening school, their friends, and for the community which the school serves. The success of the music students, therefore, is measured not only by their individual or collective attainments, but also by their influence on the growth of community musical appreciation.

CHORUS

The chorus work includes class work in vocal drills, sight-singing and in the study of standard works from the best composers under competent music directors for public performances.

PUBLIC SCHOOL MUSIC

This course is a course in primary methods subject matter and sight-singing, also in grammar grade methods subject matter and sight-singing, arranged especially to meet the needs of public school teachers wishing to pursue the study of school music and part singing.

ORCHESTRA

Twenty or more qualified players will form a class in this work under the leadership of an orchestra director. All applicants for these courses know the technique of their instrument, and must demonstrate such technical ability before their applications will be considered. At least one year of private study and practice of the technique of the orchestra instrument is a prerequisite.

ORCHESTRA (1)

This includes practice of very easy orchestra music by good writers; a discussion of a good combination of instruments to the 16-part full orchestra; the nature of the various orchestra parts and their musical idiom; primary interpretation in orchestra playing signs and terms.

ORCHESTRA (2)

This higher course in orchestra study includes practice of music of a grade of the average theater orchestra selections; arrangements of works written by standard and classical composers for grand orchestra; proper assignments of cues, etc.; resume and extension of the incidental study of the orchestra.

Class and short individual lessons in piano, violin or any other instrument will be given by graduate instructors, wherever there is a demand by twenty or more students for any one instrument.

These courses are all subject to change by the director in order to meet the special needs of the class.

RECREATIONAL GROUPS

Physical Training

MEN

- (a) Exercises preparatory to physical training, getting class arranged in the gymnasium.
 - 1. Marching—requiring a minimum of effort and a maximum of attention. Therefore, simple marching, without complicated commands or movements.
 - 2. Running—for short periods, to stimulate peristaltic action, and respiratory and circulatory systems.
- (b) Calisthenics—with or without hand apparatus.
 - 1. Corrective exercises—designed to counteract the effects of improper posture and to make possible good posture by securing and developing control of the spine, thorax, and scapulae.
 - (a) Scapular exercises—involving use of the shoulder and back muscles.
 - (b) Spinal exercises—involving large groups of back muscles controlling the spinal column.
 - 2. Hygienic exercises—designed primarily to affect the organic processes of circulation, digestion, respiration, and secretion, and to secure the development of vitality.
 - (a) Thigh and leg exercise.
 - (b) Trunk bending and twisting.
- (c) Apparatus work—aims mostly hygienic.

Climbing poles, climbing ropes, ladders placed obliquely, horizontally and vertically.

Buck, horse placed sideways, and placed lengthwise.

Parallel bars, horizontal bars and rings. Exercises involving for the most part momentary support or hang, and based in greater part upon natural activities.
- (d) Recreational work—hygienic, but mostly to supply the psychic needs of the individual.
 - 1. Gymnastic games and plays.
 - 2. Athletics and athletic games (group plan).
 - (a) Winter Term: Regular schedules of contests in broad jump relays, running relays, and basket ball games.
 - (b) Spring Term: Track and field events.
 - 3. Swimming and other tank activities.

WOMEN

- (a) Exercises preparatory to physical training, getting class arranged in the gymnasium.
 - 1. Marching.
- (b) Calisthenics.
 - 1. Corrective exercises—designed to counteract the effects of improper posture and to make possible good posture by securing and developing control of the spine, thorax, and scapulae.
 - (a) Scapular exercises—involving use of shoulder and back muscles.

- (b) Involving the large groups of back muscles controlling the spinal column.
- (c) Respiratory exercises involving the activity of the thoracic muscles.
- 2. Hygienic exercises—designed primarily to affect the organic processes of circulation, digestion, respiration and secretion, and to secure the development of vitality.
 - (a) Thigh and leg exercises—involving the activity of the large muscles of the lower limbs and hips.
 - (b) Trunk bending and twisting—exercising the great muscular masses of abdomen and lower spine.
 - (c) Apparatus work—aims mostly hygiene, but also recreational.
 - (d) Recreational work—hygienic, but mostly to supply the psychic needs of the individual.
- 1. Gymnastic games and plays.
- 2. Dancing—folk, national, or fancy.

Swimming

COURSE (1)

- 1. Calisthenic exercises of the swimming strokes.
 - (a) Arms.
 - (b) Legs.
 - (c) Arms and legs.
 - (d) In time, according to each part of the stroke.

This manner of procedure is followed for each of the breast, back, side, single and double over-arm, trudgeon, and crawl strokes.

- 2. In the tank—breast height.
 - (a) Ducking and coming up to breathe alternately—two counts.
 - (b) Arm practice—breast, side, single over-arm, double over-arm, and crawl strokes.
 - (c) Leg practice—while holding on to the sides of the tank—frog, back, scissor, trudgeon, and crawl strokes.
- 3. Breathing practice.
 - (a) Inhalation and exhalation (while swimming) at the proper time during the breast, back, side, single and double over-arm strokes.
- 4. Floating with leg push-off.
- 5. From swim to float to swim.
- 6. The turn at either end of the tank.
- 7. Swim two lengths of tank (any stroke) in proper form, correct breathing, turn, push-off and float at the end of the tank.

COURSE (2)

- 1. Camp drill.
 - (a) Back swim—hands only.
 - (b) Back swim—legs only.

2. Breast stroke, side stroke, single over-arm and under-arm, double under-arm, back stroke, without arm movement, back stroke, legs and arms; back stroke, alternating single arms.
3. Changing from one stroke to another, or more strokes, without a stop.
4. Retrieving objects of light nature and size by duck, push-off and dive.
5. Swim 50 yards with proper turns.

COURSE (3)

1. Diving.
2. Plunge for distance.
3. Swimming 100 yards with proper turns.
4. Life saving methods.
5. Schaeffer method of resuscitation.

ELEMENTARY DEPARTMENT

Detroit Evening High Schools are organized on the six-six plan. The demand for elementary work has become so great within the last two years that evening courses in the fifth and sixth grades and a course in citizenship have been added to the schedule of every evening high school.

These are now so completely equipped that they will be able to care for any student who applies for admission.

ENGLISH FOR FOREIGNERS

Elementary English courses for foreigners will be offered in ten evening high schools and the Bishop school during the year. Foreigners desiring to learn English can be accommodated in graduated groups organized to meet their needs. It is generally possible to give each individual the exact type of work that will enable him to advance most rapidly.

The Roberts' system, with certain modifications, will be used in this work.

FIFTH AND SIXTH GRADES

The fifth and sixth grades is the second division of the elementary department.

Here a rigid course in arithmetic, spelling, penmanship and English is given to those who were not able to obtain this training in the day school or abroad. The class meets four nights each week, from seven to nine, and on one night a week, forty minutes is given to a stereopticon lesson in geography. Good attendance and satisfactory work for the season entitles the student to enter the seventh and eighth grade division.

SEVENTH AND EIGHTH GRADES

The purpose of the seventh and eighth grade departments is to give to those who, through economic pressure, were forced to leave school before graduation, the equivalent of the grammar school course. The work consists of lessons in English, history, and arithmetic, and extends over a period of one hundred nights. The classes meet four nights a week, from 7 to 9. The seventh grade is finished at Christmas and the eighth grade at the end of March.

This course is organized on the departmental plan and each subject is taught by a specialist. The standard of work is equivalent to that given in the same grades in the day schools.

Each evening the session of two hours is divided into three periods of forty minutes each; the group is divided into three sections, and, in this way, the instructor of each subject meets the three groups each evening. This rotation of classes breaks the long session for the student who is tired after a day's work.

The work in English is divided into two distinct parts—reading and grammar, two evenings; and composition and spelling, the remaining two. In the reading class a great effort is made to develop a fondness for good books, as well as to produce efficient readers. Grammar and good clear speaking are never absent from the training. In the class in composition,

great attention is given to punctuation and paragraphing. Letter writing for business purposes is valuable exercise and is always interesting to the student. Spelling is taught directly as a separate subject frequently and, indirectly, in composition, all of the time. In both classes, constant drill on words often mispronounced and misused is carried on. For reading, the following texts are used:

Man Without a Country.....	Hale
Rip Van Winkle.....	Irving
North America.....	Carpenter
American Leaders.....	Gordy
Short Stories for High Schools.....	Plee-Miller
The Christmas Carol.....	Dickens
The Cricket on the Hearth.....	Dickens

Acquainting these students with the landmarks of American history and laying the foundation for good citizenship is the province of the instructor of history. During the first fifty nights all the time allotted to history is devoted to the development of our country from the beginning down to the present day. The second term is devoted to civics and it is here that the greater opportunity for preparing men and women, capable of attending to their civic duties intelligently, lies.

Seventh and Eighth Grade Government Manual, Forman's History of the United States, and Mace's History are the texts used for this work.

In arithmetic, the problem is quite different. Many are quick and able to advance much more rapidly than others, thus it becomes possible at the outset to teach a large number of pupils individually. This lasts only a short time, for within a brief period their weaknesses become strengthened, and they then advance as a class, varying in ability from year to year. The great object is to make them rapid and yet accurate; thus they are prepared for their business needs, as of course all are employed. The content of the seventh and eighth grade arithmetic courses as outlined for the day session is presented, with Hamilton's School Arithmetic as a basis.

Upon completion of this work a diploma is awarded, entitling the holder to admission to any day or evening high school.

AMERICANIZATION

The history of Americanization in Detroit and the history of Detroit Evening Schools are almost identical; since the evening elementary schools are intended primarily for the foreign born, and the very process of educating these men and women is designed to adapt them to the American language and habits of thought. For long, too, the evening schools were the only agency dealing with the Americanization problem in a systematic way.

Detroit has always had a large and constantly growing foreign population. According to the census of 1910, 33 per cent of its people was foreign born, and 74 per cent was either foreign born or of foreign parentage. The increase since that time closely approximates 300,000 in number, while the percentages mentioned have doubtless increased also. The prosperity of the city, the scarcity of labor here, and the attendant high wages were the lures that brought the foreigners here, and Detroit's experience with the influx was not different from that of other cities. Foreign colonies, always existing, grew rapidly, and new colonies took form. These presented the usual solid front against Americanizing influences and tended to perpetuate the hyphenated class.

For a long time the danger of this vast undigested element in the population of American cities was not clearly recognized, save by a few far-sighted men of affairs, whose warnings went unheeded; but the European conflict brought the problem of Americanization to the fore.

The evening schools have attempted to solve the problem. Schools were already established and had long been doing excellent work, but they had never gone out aggressively after pupils. They have offered their advantages only in a negative way to the foreigner, leaving him to discover those advantages for himself; and he seldom discovered them.

Organization of Campaign

A different and more aggressive policy was now decided upon, and accordingly, in the spring of 1915, the Board of Education joined hands with the United States Government, the Board of Commerce, and the Detroit employers of foreign labor, and set out to bring the foreigner to the school and the school to the foreigner on so comprehensive a scale that the Detroit plan came to stand as a model for other communities. Joint conferences were held, and an Educational Committee was formed on the Board of Commerce to direct the campaign. In a word, the committee undertook to get every Detroit immigrant into the school. To this end every avenue of approach to the foreigner was entered in overwhelming force. Handbills, posters, and maps were prepared describing in many languages the locations and advantages of the schools. These circulars were distributed through every civic agency to all sections and nooks and crannies of the city where foreigners were likely to be found. Libraries, courts, the English and foreign language press, churches, theatres, employment agencies, Boy Scouts, women's clubs, and individuals, all lent willing aid. But it was in the factories that the most telling work was done, for here

employers appointed responsible men to take charge of the recruiting and to bring pressure to bear upon the foreign employee to get him into school. Under the direction of these employers factory enrollments were made and attendance at school was checked daily.

The school authorities took appropriate steps to handle the increased attendance resulting from these activities. Many new evening schools were made ready; the teaching staff was greatly augmented, a special institute was held to train them in the work. The Roberts' system has been adopted with some modifications. This is a variation of the so-called "dramatic method," and has been found to be the most rapid and effective method of imparting the ability to speak the English language.

Text in Citizenship

Citizenship, or practical civics, was also stressed, a textbook adapted to local conditions being prepared and distributed free to students. The common error of trying to go too deeply into the subject was avoided, only the vital details of our American Government being taught to the average class. By co-operating with the Bureau of Naturalization and the Detroit courts it was made possible to prepare the men for naturalization at the schools, even to the filling out of the blank forms. Several trips to the courts were often saved the applicant, and he was protected against exploitation. The work of the Naturalization Bureau was thus decreased greatly in individual cases, while the number of applications increased by leaps and bounds.

To keep in touch with this phase of the situation, the Board of Education detailed an attendance officer to the evening school department. This officer secured the names of declarants and applicants for citizenship from the naturalization authority interviewed them and assigned them to the nearest schools.

The citizenship portion of the evening school activities proved the most enduring and popular of all, so that at the close of the regular session of one hundred nights, several elementary schools were kept open till June to fill the demand for instruction.

The work of Americanization has been centered in the high schools. The war has given a wonderful impetus to the imparting of the American spirit to the foreigner and it has at the same time taken the greater part of the evening school material into the army, and thence automatically into citizenship. It has, therefore, done for the foreigner some of the very things the schools exist for, and the school attendance has suffered correspondingly.

Classes in Civics

The results of the earlier Americanization work when so many aliens were induced to become "declarants," are now being felt in an increased number of petitioners for final papers of citizenship. The petitioners, who are usually of a more advanced class than the declarants, must pass an examination of more or less severity before the naturalization examiners and then before the courts in order to obtain his papers. The vast majority of the petitioners find this examination a formidable obstacle to success. To

assist them special classes have been established in the Cass Technical Evening High School and in other high schools where the demand warrants it, where a short course in civics for petitioners is given under the supervision of an Americanization expert. The course evolved is unique and has proved extraordinarily efficient. Pupils may join classes at any time, and they graduate when they are qualified, regardless of the length of their attendance, the normal time required being fifteen evenings. Upon graduation they are presented with a certificate, which they take to the naturalization examiner for his endorsement. This obtained, the Naturalization Bureau gives the applicant an official certificate which is received by the court as sufficient evidence of the applicant's educational fitness. Thus tedious court examinations, embarrassing to applicants and costly to the court, are saved, and by this co-operation of school and court the welfare of all concerned is vastly advanced.

This class meets the year around on Mondays, Tuesdays, and Wednesdays, from 7:30 p. m. to 9 p. m. There is no charge for tuition, and the only requirements is a fair knowledge of English on the part of the pupil. It is thus a complement of the classes in elementary English and aims to give the pupil a real understanding of our political system in as brief a time as possible. Instruction is given in the geography and history of the United States, in the workings of the Federal, State, County, and City Governments; and a thorough study is made of the naturalization process, the constitution and the ballot.

It is also the policy to open classes in English and Americanization in any Detroit factory where the facilities and attendance justify it.

BEGINNING CLASS: FIRST TERM

Robert's Dramatic Method of Teaching English. Simple words and sentences descriptive of common, daily experiences of pupils taught vocally and by illustrative action on the part of the teacher, and by repetition on the part of the pupil. The sentences are intended by their content to afford instruction in hygiene, in the American social system, and in the method of taking first citizenship papers.

BEGINNING CLASS: SECOND TERM

Dramatic method continued to enlarge vocabulary and impart dexterity in the enunciation of English words. Simple reading and writing exercises, graduated to fit the abilities of the class are begun. Subjects helpful and patriotic form the theme of these exercises. The aim is to assist the alien to adjust himself to American environment.

ADVANCED CLASS

Robert's First English Reader. Simple readings in American history, biography, geography and government. Exercises in writing to improve penmanship. Simple compositions on topics drawn from readings and experience attempted.

ADVANCED CLASS

Readings continued as in third term. Letter forms taught. American postal system explained, and the whole is co-ordinated with the study of American geography. Pupils are instructed how to proceed to take out second citizenship papers.

SPECIAL CITIZENSHIP CLASSES

(Cass Technical Evening High School)

This class is for petitioners for final papers. It meets three nights a week and the course continues four to five weeks.

Textbook: Chancellor's History and Government of the United States.

The course comprises a study of:

- (1) The land and its resources
- (2) The geography of North America
- (3) The aboriginal inhabitants and the discoveries of Columbus
- (4) History from Columbus to the present day
- (5) The theory of republican government, and Federal, State, County, and City systems
- (6) Election processes and a practical study of the ballot
- (7) Elementary economics and American business methods
- (8) The Constitution of the United States

THE JUNIOR EVENING COLLEGE

(CENTRAL HIGH SCHOOL)

The aim of the Junior Evening College is to offer courses in college work for those students who are unable to attend the day sessions of the college. Classes will be formed in any subject desired whenever twelve or more students elect such a subject. Classes in chemistry have already been given in recent years. College courses in physics, mathematics, English, and modern languages will be offered whenever there is sufficient demand.

It is hoped in time to be able to establish courses in industrial lines, for those who wish a somewhat more practical and less theoretical training than that offered in the strictly college course.

Admission is restricted to graduates of high schools that offer four years of work and require not less than fifteen units for graduation. Subjects for admission are divided into two groups, required and optional.

Group I. Required Subjects

English composition	3 units
Mathematics	2 units
Foreign language	1 unit
History	1 unit
Science	1 unit
<hr/>	
Total	8 units

Group II. Optional Subjects

In general any subjects taught in high schools, or in evening, vocational, or continuation schools of high school grade, may be offered to meet the remaining seven units required for admission. Such are:

Agriculture	Literature
Economics	Mathematics
Art	Psychology
Geology	Mechanic Arts
Astronomy	Public Speaking
History	Music
Civics	Salesmanship
Household Arts	Pedagogy
Commercial Branches	Science
Foreign Languages	Physiography
Drawing	Shop Practice

DETROIT CITY NORMAL SCHOOL (EVENING CLASSES AT CENTRAL HIGH SCHOOL)

PURPOSE

The evening work offered by the Detroit City Normal College is intended for teachers in service and for those who are making preparation for positions as teachers.

The courses are planned for the following:

1. Administrative officers who wish to consider administrative problems in the light of the recent literature of the subject.
2. High school teachers who wish to join working conferences in their respective subjects, or who are interested in current discussions of educational aims, principles, and values.
3. Junior high and grammar grade department teachers.
4. Elementary teachers.
5. Kindergarten teachers who wish to familiarize themselves with primary methods.
6. Teachers of Special, Ungraded, Backward and Opportunity Classes.
7. Detroit City Normal graduates who wish to exchange their former diplomas for the two-year diploma now granted, and which carries 56 hours' credit at the University of Michigan.
8. Normal cadets or graduates who wish to finish uncompleted "College Credit" courses.
9. Normal School students and others, who wish to earn evening credits applicable to the requirements for Normal School diplomas.

ADMISSION

There are no formal requirements for admission to the evening session. In general, the courses are open to all students qualified to pursue them to advantage.

FEES

No fees are charged residents, the work being part of the regular evening school organization.

TIMES AND PLACES

The session for 1919-1920 will open at a date to be announced in a special circular, and will last for 20 weeks. With a few exceptions classes will meet once a week from 7 to 9 p. m. While most of the classes will be held at Central High, other places more convenient to particular groups may be arranged with the instructor and principal. If desired, some meeting might be arranged to after school or Saturday hours.

CREDITS

Credit certificates are acceptable for regular credit at the Detroit City Normal and for entrance upon the teachers' record cards at the office of the Superintendent of Schools. A number of the courses listed are those accepted for credit at the University of Michigan, when taken as part of the Detroit City Normal diploma requirements. A one hour a week course for the 20 weeks earns one hour credit, a two hour a week course earns two hours' credit, etc.

INSTRUCTORS

Complete announcement cannot be made of the personnel of the teaching force until the preliminary registration is completed. In general, the courses are offered by the principal of the Normal School and by selected teachers from the Normal and High School faculties and from the supervisory corps.

Courses

EDUCATION (1)

A Round Table for Principals, first assistants and others interested in the problems of school administration. One hour a week.

EDUCATION (2)

"The Teaching Process," a course intended primarily for teachers in the junior and senior high schools and in the upper grammar grades. The object of the course is to consider the various types of lessons, the class management best adapted to each type, the planning and organization of subject matter and the testing of results. Strayer and Norsworthy, "How to Teach."

EDUCATION (3)

Primary Methods: A study of subject matter, principles, and methods of teaching reading, spelling, and language. Course includes observation of model lessons, practice in story-telling, and writing of plans.

EDUCATION (4)

Educational or Child Psychology. This course presents the successive stages of physical and mental development from birth through adolescence. Consideration will be given to the various forms of behavior and the significance for the educative process.

EDUCATION (5)

Psychology. An outline of modern psychology, showing the relation of psychological problems to education.

EDUCATIONAL MEASUREMENTS

This course is designed to aid instructors, (1), In the interpretation and use of tests; 2), In familiarizing themselves with statistical methods. (3), In constructing and handling scientifically the ordinary teacher's examination.

SPECIAL EDUCATION (1)

Course for teachers of backward and mentally deficient children. Mental deficiency: Character, causes and extent of mental deficiency and retardation; classification of exceptional children; psychology of retardation and deficiency.

SPECIAL EDUCATION (2)

Course for teachers of backward and mentally deficient children. Clinical tests and measurements: A laboratory course in anthropometric meas-

urements and mental tests. Tests of school progress and of intelligence will be applied to children brought to the class for that purpose. Every student will have the opportunity of testing both normal and sub-normal children.

ENGLISH (1)

Literature: The literature of Elizabeth and the Puritan age. Two hours a week.

ENGLISH (2)

Literature: Outline course in English literature. Poetry of the nineteenth century. Two hours a week.

ENGLISH (3)

English Methods: A course for elementary teachers in grades 4 to 8. Two hours.

ENGLISH (4)

Dramatization. A study of the manifestations of the dramatic instinct in children and the educational value of dramatic performances in the school. Pageants and festivals are discussed. Attention is given to the dramatization of stories suited to the various grades, to the selection of plays for school children and to stage deportment and management. Practice is given as far as possible in the various lines.

ENGLISH (5)

Story-telling. A brief study of material for story-telling and organization of the material into story form suited to the mind of the child. The great emphasis of the course will be placed on the art side of the work and the largest possible amount of actual practice in story-telling will be given to members of the class.

FRENCH (1)

For Beginners. The work will be equivalent to the first term in the regular course, enabling the student to continue in the fall with course (2). Two hours.

FRENCH (2)

A reading and conversation course for students who have already had a year or more of college French or two years in the high school. Two hours.

HISTORY (1)

Development of modern Europe from 1643 to the Congress of Vienna. Special attention given to the French Revolution and the Napoleonic Period. Two hours.

HISTORY (2)

Development of modern Europe from the Congress of Vienna to the present time. Two hours.

ARITHMETIC (1)

This course is planned for primary teachers. Especial attention is given to methods of presentation of class work in the lower grades. Actual practice is given in drills, devices, and busy work of an arithmetical nature suitable for the lower grades.

ARITHMETIC (2)

This course is planned for teachers of the grammar grades and the junior high school. Attention is given methods of presentation of class work in the development of new topics. Actual problems from the life of the pupils of this age are used as far as possible. Current newspapers and magazine articles are also freely consulted. A review of the textbook used in Detroit schools is also given.

GEOGRAPHY (1)

Teachers' Geography, a course on the problems and methods of geography in the elementary schools.

GEOGRAPHY (2)

The material and methods for geography in grades five and six. Two hours.

KINDERGARTEN

The theory and practice of the modern kindergarten. Two hours.

HAND WORK

The course comprises work suitable for kindergarten and primary grades—clay and paper modelling, sewing, weaving, cutting and drawing. Students would try assembling these different kinds of occupation to bring out expression in English and to accomplish more definite understanding of topics used in stories or units.

PHYSICAL TRAINING

The materials and methods for elementary school physical training. One or two hours.

MUSIC

The materials and methods for elementary school music. One or two hours.

ART

The materials and methods for elementary school art. One or two hours.

WORKING CONFERENCES

Group meetings under competent leadership to consider the subject matter, aims, problems, methods and tests for a given subject for a school month. One hour, bi-weekly, or oftener.

(a), English, (sub-groups), Junior and Senior High Schools; (b), History, Ancient or Mediaeval; (c), History and Civics, Junior High; (d), Algebra; (e), Arithmetic, Junior High; (f), French, and (g), other groups, if desired.

TEACHERS' TRAINING COURSE IN MECHANICAL DRAWING
(Given at Cass Technical Evening High School)

A training course for teachers of mechanical drawing and the related mathematics will be organized at Cass Technical High School. The course is open to all evening school teachers of drawing, to all those who wish to

qualify for teaching the subject in the evening schools, and to any other teachers who may wish to broaden their qualifications and general improvement.

This will be a general course in drawing with particular attention given to the attitude of the teacher toward the problem of the night school, the content of the courses, general method, supervision of the room, equipment and supplies. Part of the time is given to the discussions and the remainder to actual drawing in the drafting room. Enough of the latter is done to thoroughly ground the student teacher in good method and good practice.

Some of the topics for discussion are lettering, placing of views, dimensioning, inking, free-hand working drawings, section views, conventions, and standards as adopted in the public schools.

The class meets once a week from 7:00 to 9:00 o'clock.

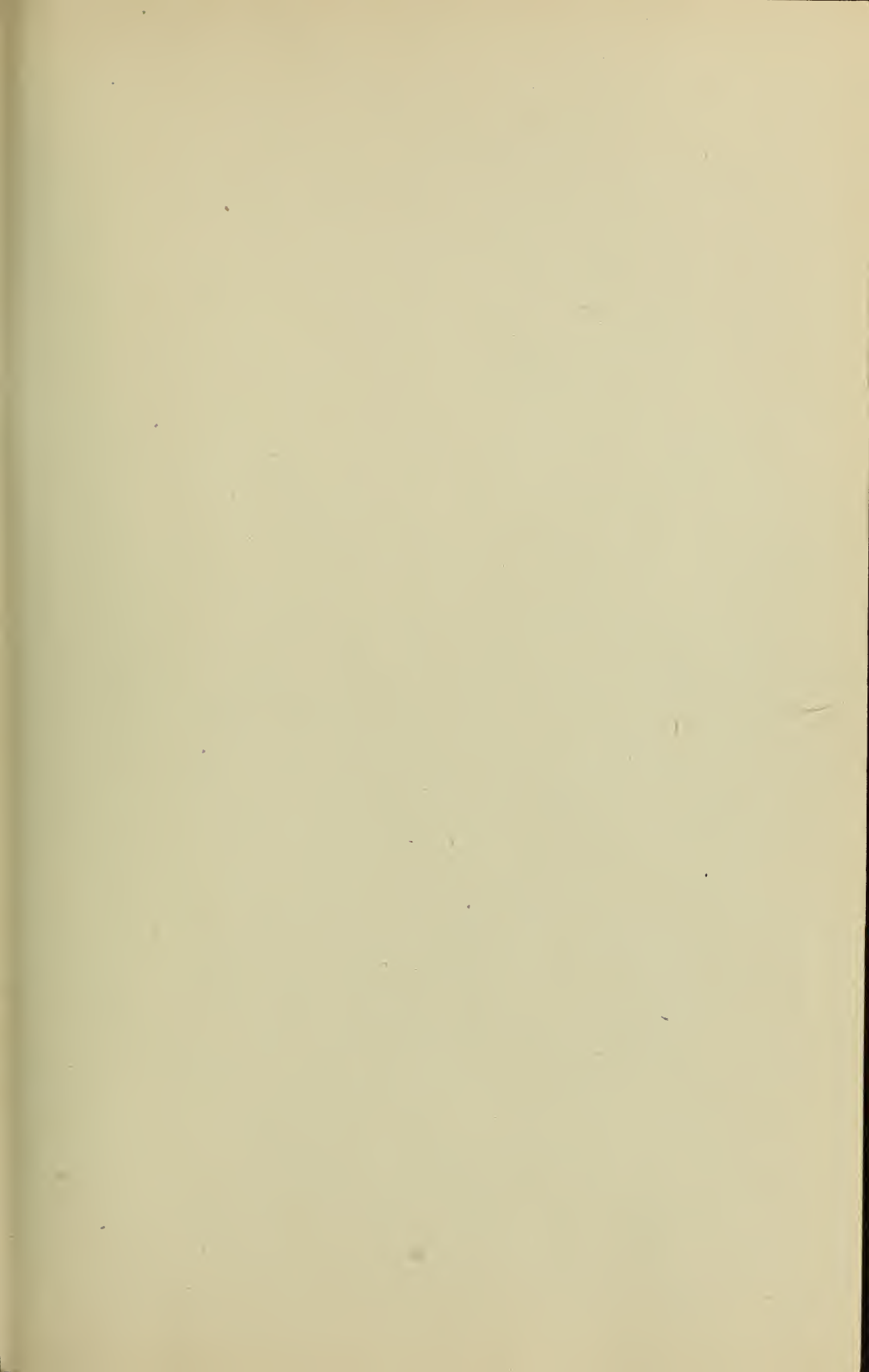
This course is required of all prospective teachers for drafting in the Evening High School.

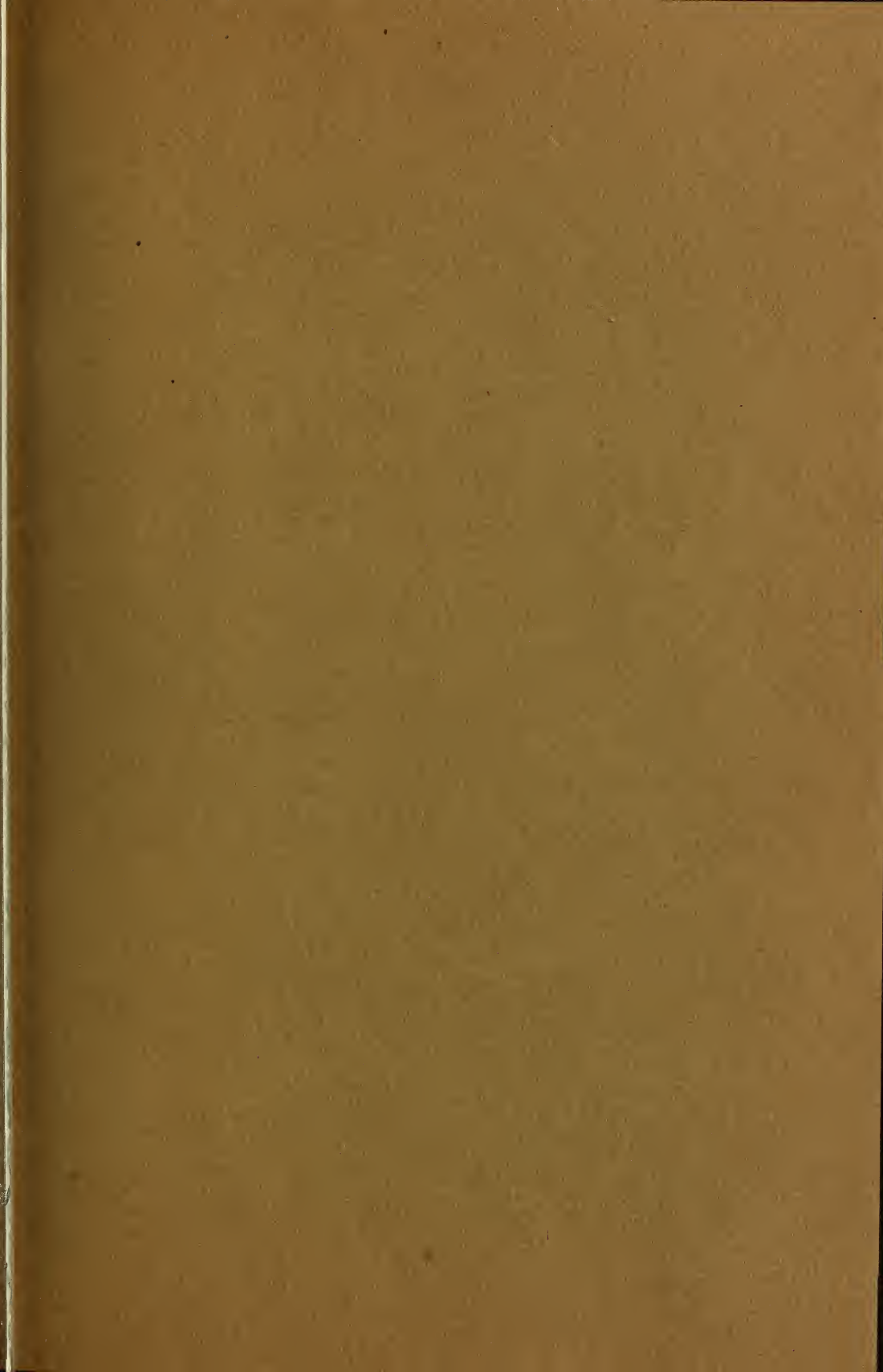
SUPPLEMENTAL LIST OF TEXT BOOKS

- Gregg—Business English—Gregg Pub. Co., Chicago.
Dwyer—The Business Letter—Houghton, Mifflin Co.
Wood—Practical English Grammar—D. Appleton & Co.
Wooley—Hand Book Composition—D. C. Heath & Co.
Cody—How to Write Business Letters—School of English, Chicago.
Keal and Phelps—Secondary Mathematics—Atkinson, Mentzer & Co.
Fimble and Higbie—Alternating Currents—J. Wiley.
Wolber and Carr—Elementary Electrical Engineering—Cass Technical
High Printery.
Hoover—Salesmanship.
Wentworth, Smith and Schlauch—Commercial Algebra.
Huchingson—Penmanship.

INDEX

Academic Department	34-41	Machine Shop	19
Accounting	30	Mathematics	16
Algebra	38	Millinery	43
Americanization	50	Music	44
Arithmetic, Business	30	Normal School	55
Arithmetic	39	Nordstrum High	9
Bishop School	14	Northeastern High	10
Blue Print Reading	22	Northern High	11
Bookkeeping	30	Northwestern High	12
Business Credits	31	Pattern Making	23
Cabinet Making	23	Purpose	3
Calendar	2	Printing	24
Cass Tech	5	Pharmacy	25
Central High	7	Physics	41
Chemistry	25-40	Physical Training	45
Chemistry for Nurses	26	Salesmanship	32
Commercial Group	28	Schedule of Classes.....	5-14
Cooking	42	Southeastern High	13
Drawing, Mechanical	15	Sheet Metal Work	21
Drawing, Architectural	17	Science Group	25-27
Eastern High	8	Shorthand	28
Electricity	26	Seventh and Eighth Grades....	48
English, Commercial	28	Spanish	37
English, Academic	34-36	Sewing	42
English for Foreigners.....	48	Swimming	46
Forge Work	21	Supplemental Texts	60
French	36	Tailoring Design	24
Fifth and Sixth Grades.....	48	Technical Group	15-24
Gas Engine	18	Tool Design	22
General Information	4	Typewriting	29
Geometry	38	Trigonometry	39
History	37	Western High	14
Junior College	54	Wilkins High School of Commerce	6
Latin	36	Woodworking	22
Law, Commercial	31		







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